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ABSTRACT

This longitudinal study investigated mother-infant interaction patterns and infant social and emotional development as influenced by maternal and non-maternal infant care and by selected maternal and infant characteristics. Extensive data (including maternal attitude scores, demographic infomration, infant care observations, developmental test scores, stranger-approach responses, and separation behavior observations) were collected and analyzed for 181 mother-infant pairs at the infant's birth and 8 weeks, 3 months, 8 months, and 12-12 1/2 months later. Results showed that the employment status of the mother and the related use of non-maternal child care did not influence mother-child interaction patterns. The mother's caregiving behavior, attitudes, and role perception were found to affect infant social-emotional growth. Results of the study also showed some support for the existence in infants of a temperament-like behavioral style. Maternal attitudes reflecting beliefs in exclusive maternal caregiving and characteristics portraying infant-centered, adaptive approaches to child rearing showed considerable stability over the months of study. Interview instruments used in the study are reproduced in their entirety in the appendix. (Author/BRT)

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ALTERNATIVE APPROACHES TO CHILD REARING AND THEIR EFFECTS ON THE MOTHER-INFANT RELATIONSHIP

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Introduction

The Sections of This Report

In the following sections of this report, the reader will first find a "Statement of the Problem", outlining the nature and origin of concerns treated in this study. Second, a statement of "Objectives of the Study" is provided, to give a general overview of the topics treated in this report. Third, an "Overview of the Study Design" is provided, to give a framework for the detailed discussion of procedures to follow. Fourth, "Procedures for the Study" are outlined in detail, describing the sample selection method and sample attributes, variables and instrumentation used, and phases and modes of data collection employed. Fifth, "Results" of the study are treated. Finally, a "Summary of Major Findings" concludes the report text, highlighting results believed to be of special significance from among the many findings of the work. An Appendix to this report contains various procedural documents used in the study, and copies of unpublished study instruments.

Statement of the Problem

The general intent of this study has been to gain a better understanding of the social-emotional development of the infant over the infant's first year of life, and to describe affects of alternative approaches to infant care on social-emotional development. The investigation dealt with a number of attributes of mothers and infants, across several types of infant care, through a longitudinal study of the infant's first year of life.

There are a number of reasons for conduct of such a study, both rooted in current social conditions and arising from work of researchers engaged in similar study. The study looked particularly at groups of working and nonworking mothers of infants, from the time immediately following infant birth through one year of infant age. Within the past 35 years, maternal employment in the United States had increased eightfold. In 1970, six million children under the age of six had working mothers; today, employed mothers in the United States exceeds twelve million. Concern has been expressed often about the advisability of mothers working; the effects of maternal employment on children is, in an explicit and limited sense, one focus of this study.

Changes such as increased maternal employment have given rise to increased attention to alternative approaches to child rearing, notably the provision of day care services and centers for young infants. While some studies have shown certain kinds of infant day care can benefit the intellectual development of young infants, concern for the social-emotional well-being of the infant deserves attention as well. Alternative arrangements of child care clearly alter the exclusive, significant early relation of a mother to her infant. Thus, the study had as a focus groups of infants experiencing alternative arrangements for thier care, with attention to effects on developing mother-infant relationships over the first year of infant life.

Closely-linked to a concern about the mother-infant relationship is the concern about the infant's relationship to other adults. In fact, a clear picture capturing the essence of infant social development must include descriptions of the infant's behavior in the presence of other persons than the mother.

Infant relationships with other adults was of particular interest here because of the study's focus on affects of alternative approaches to infant care. It is likely that infants of working mothers experience not only less maternal contact, but also increased contact from non-maternal caregivers. Thus, in order to adequately describe the affects of alternative approaches to infant care on the infant's social-emotional well-being, infant relationships with both mother and other adults were studied.

Other factors, in addition to alternative kinds of infant care, are thought to strongly influence social-emotional development and so received attention in this study. Maternal caregiving behavior and maternal perception of the role of mother were studied as they related to infant characteristics. As well, infant behavior observed and assessed early in the infant's first year of life was related to later-appearing behavior of a social-emotional character. To summarize, the major aim of this study was to describe infant social-emotional development, portrayed here as the character of infant interaction with mother and other adults, as influenced by alternative kinds of infant care, and selected maternal and infant characteristics. The study looked at both infants and their mothers focusing on four times in the infant's first year of life: birth, 3, 8, and 12 months of infant age.

Objectives of the Study

In aiming to characterize and appraise factors that influence social-emotional development over the infant's first year of life, this study had two broad objectives:

1) to depict certain attributes of mothers and infants and their relationship over the first year of infant life, with particular attention to the social-emotional development of the infant; and

2) to depict how these relationships differ under alternative arrangements of infant care chosen by mothers of varying attributes.

More specifically, this study aimed to respond to the following research questions:

- What is the relation between selected demographic characteristics and maternal and infant characteristics observed during the course of the infant's first year of life?
- How do selected measures of maternal attributes relate when measured concurrently and when measured at successive periods?
- How do selected measures of infant attributes (developmental level and social behaviors) relate when measured concurrently and when measured at successive periods?
- What is the nature and extent of the relationship between maternal characteristics and infant developmental level and social behavior?
- What is the relation between infant social behaviors exhibited in the Strange Situation Behavior Instrument and maternal work status, and type, location, and time of onset of non-maternal care?

Overview of the Study Design

Over the course of the two years of this study, a longitudinal approach was employed emcompassing a number of phases of activity. Beginning at the time of the infant's birth, information was collected about the mother's perception of her role, her feelings about caring for her infant, family composition and infant characteristics, to be related to mother-infant interaction at 3 months of age as well as choice of infant care alternatives and the effects of this choice on mother-infant interaction and stranger-infant interaction at 3 and 12 months of age. Data collection for each mother-infant pair began at the time of the infant's birth and continued throughout the first year of life. Briefly the major phases of data collection were:

PHASE I	Maternity Ward: Survey of mother's infant care plans. Sample selection and maternal post-partum interview.
PHASE II	Infant Age 8 Weeks: Mail contact welcoming study participant and requesting updated information.
PHASE III	Infant Age 3 Months: Home visit including observation of mother-infant interaction, maternal role interview, infant developmental testing.
PHASE IV	Infant Age 8 Months: Home visit entailing observation of mother-infant interaction, assessment of maternal attitudes about child rearing, infant developmental testing, and assessment of infant response to a stranger's approach and infant behavior during mother's brief absence.
PHASE V	Infant Age 12 - 12½ Months: A laboratory visit involving observation of mother-infant interaction to assess infant behavior directed to mother and stranger in the context provided by the Strange Situation Behavior Instrument. Infant developmental testing.

Procedures for the Study

Overview of This Chapter

The overall aim of this longitudinal study was to describe selected maternal and infant characteristics as they related to one another and changed over time. In addition to describing developmental changes occurring over a 12-month period the investigation sought to assess the impact of maternal employment and subsequent non-maternal care on mother and infant behavior and on the mother-infant relationship. To achieve this end data analysis involved comparison of home-reared mothers and infants and non-home-reared mother-infant pairs in addition to analyses that involved testing relationships between attributes of all study participants considered as a total group. Various measures were administered to mother and infant at several points in the infant's first year of life. The study measures generally assessed psychological variables thought to describe social and emotional attributes of human functioning.

This chapter will describe procedures utilized in this study to accomplish the aims described above. In the following sections, sample selection is described first accompanied by figures and comments regarding attrition of the population over the 12-month period followed by characteristics of the final population. Then the instruments used throughout the study are listed and described. Instruments of this study, thought to be particularly critical to the aims, are described in detail that includes instrument development history and descriptions of other studies utilizing similar measures where comparable data was collected. Factor analyses were performed on data collected at birth, 3 and 8 months infant age which generated factor scores utilized in data analyses. The factors and their loadings are presented in this chapter in the Instrumentation section. Finally, the data collection schedule is presented in Table form accompanied by a discussion of hospital, home visit, and laboratory procedures.

Sample Selection

The purpose directing the sample selection process was two-fold: to undertake a survey of the infant care plans of mothers giving birth over a three and one-half month period and on the basis of those plans, to obtain a sample of mothers and infants to serve as participants in the longitudinal study. In order to identify mothers shortly after the birth of their babies, hospital maternity wards were selected as the first site of subject contact. Letters were prepared to solicit the support and cooperation of obstetric staff physicians; those letters resulted in a high and positive response from physicians delivering patients at those hospitals, with 54 physicians participating and only four refusing to participate in the study effort. In addition, the cooperation of the obstetric and newborn nursery staff in the two hospitals was sought and obtained, through information being provided to them in seminars and workshops. The initial survey sample selection included mothers giving birth (and their infants) between November 1, 1973 and February 15, 1974; all births of normal (in the assessment of the attending physician), full-term, singleton infants not placed for adoption and for which the attending physician had consented to have his patients participate in the study were included, from two large Columbus, Ohio hospitals. 1432 mothers and their infants participated in that study phase; during the survey activity, the following information was collected:

a. hospital of birth
b. patient name, address, and telephone number (if available)
c. attending obstetrician
d. date and time of infant birth
e. infant sex and birth weight
f. parity (birth order of the infant born)
g. hospital plan (rooming-in or "traditional" care; private or clinic patient status)
h. normality of infant birth (noted on infant record by physician)
i. race
j. marital status of mother
k. infant care plans of mother

Table 1 represents attributes of the surveyed population and shows selected characteristics of the mothers who formed the basis of later study activities by indicating their infant care plans. 1,432 mothers were surveyed in the two hospitals over a 3½ month period. Of the total population, slightly more males (52.2%) than females were born; and almost half (42.7%) of the mothers were giving birth to their first child. About one quarter (26.8%) of the population were clinic patients, representing a lower socioeconomic status than the rest who were private patients. 11% of all mothers surveyed were not married at the time of the infant's birth. 86.1% of the 1,432 mothers were Caucasian, while 12.6% were Negro and 1.3% represented other races. 84.4% of the mothers indicated their intent to rear their infants at home, while the remainder (15.6%) planned to use an alternative type of child care. Tables 2, 3,

TABLE 1

Population Characteristics
N = 1,432

Variable	Percent	Number
Sex of Infant		
Male	52.2	747
Female	47.8	685
Birth Order		
First	42.7	612
2nd, 3rd, ...N	57.3	820
Private-Clinic*		
Private	73.2	1043
Clinic	26.8	381
Marital Status**		
Yes	89.0	1273
No	11.0	157
Race of Mother ***		
Caucasian	86.1	1232
Negro	12.6	181
Other	1.3	18
Intent to Home-Rear		
Yes	84.4	1209
No	15.6	223

* 8 observations missing
** 2 observations missing
*** 1 observation missing

and 4 portray selected characteristics of the mothers who did not intend to home-rear their infants. Table 2 shows that more Negro mothers (about 30 in 100) than Caucasian mothers (about 13 in 100) intended not to rear their infants themselves. About 87 in 100 married mothers (Table 3) intended to stay home and rear their infants themselves, while only 65 in 100 unmarried mothers indicated the same intent. Of the private patient mothers (Table 4), approximately 12 in 100 mothers indicated non-home-rearing plans for their infant, while more of the clinic patient mothers (about 1 in 4) planned on non-home-rearing.

Following these survey activities, selection of study participants for further longitudinal study was made on the basis of (a) whether mothers planned to stay in the Columbus metropolitan area for one year and (b) whether, after hearing the goals and procedures for the study, mothers gave signed consent to participate in the study. Of those participants who planned to stay in the Columbus metropolitan area, almost all gave consent for participation in the study.

Mothers were categorized into two study groups, representing working and nonworking mothers in terms of plans for work and plans to rear their children in arrangements other than home-rearing. That sample categorization was based on use of mothers' plans for infant care, developing categories of (first) those mothers who planned to work and who did not plan on solely home-rearing their infants and (second) a sample of mothers who planned not to work and who planned on home-rearing their infants. This selection differentiated between mothers who:

a. planned to be unavailable to care for their infant for at least 20 hours a week (most often to work--e.g., "working mothers"--but also to engage in educational or other activities), and thus must make or find alternative infant care arrangements to home-rearing; and

TABLE 2

Percent of Caucasian, Negro, and Other Races Who Intend to Home-Rear Their Infants

Race	Yes	No
Caucasian (86.1%)*	86.7%	13.3%
Negro (12.6%)*	68.0%	32.0%
Other (1.3%)*	94.4%	5.6%
Total**	84.4%	15.6%

TABLE 3

Percent of Married and Non-Married Mothers Who Intend to Home-Rear Their Infants

Married	Yes	No
Yes (89.0%)*	86.7%	13.3%
No (11.0%)*	65.6%	34.4%
Total**	84.4%	15.6%

TABLE 4

Percent of Private and Clinic Maternity Patients Who Intend to Home-Rear Their Infants

Private-Clinic	Yes	No
Private (73.2%)*	87.4%	12.6%
Clinic (26.8%)*	75.9%	24.1%
Total**	84.3%	15.7%

*Percent of total survey population represented by this group.
**Total percent who intend to home-rear for groups combined.

b. planned to stay at home and care for their infant.

Mothers who were in the first group, labeled "study group A", represented working mothers who planned on use of infant care arrangements other than home-rearing. Mothers in the second group ("study group B") comprised mothers planning not to work and planning to home-rear their infants; these mothers were chosen to match those in study group A. To better insure that the final study population would include comparable numbers of working and nonworking mothers and to insure that the two groups would possess comparable demographic characteristics, a matching procedure was employed in subject selection. Nonworking mothers were matched to working mothers on the basis of the following variables:

a. sex of infant (chosen for its relationship to later infant development)

b. hospitalization plans of the mother, including:

  1) rooming-in as contrasted with "traditional" hospital maternity care (chosen for its relationship to maternal contact during the neonatal period); and

  2) private as contrasted with clinic patient status (chosen as a surrogate for maternal socioeconomic status)

c. parity of mother (number of live births) first as contrasted with two or more, chosen for its relationship to mother-infant interaction; and

d. marital status of mother (single or married, chosen out of concern about family constellations and relationship to later family-infant interaction)

All mothers who planned to work were asked to participate; upon receiving the consent of a "working mother," the next admitted maternity patient who did not plan to work and met the matching requirements was asked to participate. These matching procedures produced a random sample of working mothers but a non-random sample of nonworking women;

it is plausible that data might have differed somewhat were the samples both drawn randomly. (The matching procedure was employed only to facilitate sample selection; subsequent treatment of the data did not utilize matched pairs analyses.)

Utilizing this sample selection procedure, 285* mother-infant pairs agreed to participate, were interviewed and considered study participants.

Sample Attrition and Characteristics of the Final Study Sample

Attrition is often a threat to external validity in longitudinal studies. The groups of working and nonworking mothers were compared to determine similarities or differences between the subjects who withdrew from the study (N=104) and those who remained with the study throughout the first year of their infant's life (N=181). Comparisons were made on the following variables:

1) original work plans of mothers
2) sex of infant
3) infant's birth order
4) type of hospitalization of the mother, including
    a) rooming-in as contrasted with typical care, and
    b) private versus clinic patient status
5) marital status
6) race
7) mother's occupation
8) mother's education
9) social class
10) mother's age.

---

*One nonworking match could not be secured.

A total of 104 subjects were lost during the 12 month period from the birth of the infant to infant age one year (Table 5). Fifty-seven of these mothers indicated that they had planned to return to paid employment or to school and 47 planned to home-rear their infants. The greatest attrition took place prior to infant age three months.

The reasons for sample attrition are reported in Table 6. Inability to locate the mothers accounted for 41 percent of the sample attrition. Almost 32 percent of the mothers moved from the area. Only 22 percent of the sample attrition was caused by mothers refusing further study participation. The remaining five percent of attrition was due to infant or mother illness, death, or separation.

The demographic characteristics of the group of subjects who withdrew from the longitudinal study and the final study sample were compared. The groups were similar with respect to their original work plans, sex of infant and hospital plans (rooming-in or traditional). However the group lost to the study had more children, were younger mothers and were of lower socioeconomic status (determined by Hollinghsead-Redlich Two-Factor index utilizing occupational and educational information) when compared to subjects remaining in the study. Although the final study sample may not be representative of the population at large it should be noted that there remained in the study many subjects representing each social class. (See Table 7). Presented in Table 7 are selected characteristics of the final study population of 181. As they were categorized by original work plans, as stated in the maternity ward interviews, the final population consisted of almost equal numbers of mothers who intended to work and those who did not.

TABLE 5

TOTAL SAMPLE ATTRITION OF CONSENTING STUDY PARTICIPANTS WHO WITHDREW FROM THE STUDY AFTER THE HOSPITAL PHASE

Attrition	Infant Age 3 Months	Infant Age 8 Months	Infant Age 12 Months	Total Withdrawals
Working*	40	13	4	57
Non-Working*	26	19	2	47

*Original work plans as stated in the hospital phase of the longitudinal study.

TABLE 6

REASONS FOR SAMPLE ATTRITION

			Total	
Reasons	Working Number	Non-Working Number	Number	Percent
Unable to locate	24	19	43	41.3
Refused further participation	13	10	23	22.1
Moved	19	14	33	31.7
Extended infant hospitalization	---	1	1	1.0
Infant death	---	1	1	1.0
Infant not with mother	---	2	2	1.9
Extended mother illness	1	---	1	1.0

TABLE 7

Sample Characteristics
(N=181)

Variable	Number	Percentage
Original Work Plans		
Intends to Work	87	48.1
Intends not to Work	94	59.1
Infant Sex		
Male	92	50.8
Female	89	49.2
Birth Order		
First Born	121	66.9
Non-First Born	60	33.1
Type of Hospitalization		
Rooming-in	71	39.2
Traditional Care	110	60.8
Private Patient	132	72.9
Clinic Patient	49	27.1
Marital Status		
Married	146	80.7
Not Married	35	19.3
Race		
Caucasian	146	80.7
Other	35	19.3
Mother's Occupation		
Professional	2	1.1
Semi-Professional	42	23.2
Highly Skilled White Collar	20	11.0
Lesser Skilled White Collar	49	27.0
Semi-Skilled	3	1.7
Unskilled Laborers	12	6.6
Welfare	15	8.3
Not Employed	38	21.0
Mother's Education		
Post Graduate Studies	11	6.1
4 Years of College	45	24.9
Partial College	32	17.7
High School Graduate	59	32.6
Partial High School	30	16.6
Junior High School	4	2.2
Social Class		
Upper	22	12.2
Upper-Middle	33	18.2
Lower-Middle	48	26.5
Upper-Lower	47	26.0
Lower-Lower	31	17.1
Mother's Age		
15 - 19	30	16.6
20 - 24	64	35.3
25 - 29	60	33.1
30 - 34	24	13.3
35 - 39	2	1.1
40 - 41	1	.6

Instruments Used in the Study

This investigation adopted a multi-method approach to data collection. Baumrind (Note 3)and Lytton (1971) have given consideration to methods used to study parent-child relationships and agree that to achieve the most accurate picture of such a complex relationship several methodilogical approaches should be used and the data then compared. In the case of this study, naturalistic observations of mother-infant interaction in the home were augmented by structured observations in a laboratory setting. Maternal attributes were assessed by ratings based on interviews, ratings based on naturalistic observations, and frequency counts of observed discrete behaviors acquired using a time-sampling technique.

Primary data collection phases, outlined in the Introduction to this report, occurred during the mothers' stay in the maternity ward (phase I), during home visits at infant ages 3 and 8 months (phases III and IV, respectively), and at a laboratory visit at 12 months infant age. To accrue comparable data longitudinally, the same measures were utilized at each phase, whenever appropriate.

Because of the potentially cumbersome task of reviewing at length all instruments and variables utilized in this study, instruments that are standardized and/or widely published are treated exclusively in tabular form in Table 8, pages 18 to 23, which lists and briefly describes all instruments employed in the study. Instruments that were modified or developed for use in this study are described in detail and, where several variables were factor analyzed, the factor scores and loadings are presented. The following data collection techniques will be discussed in the order indicated:

TABLE 8

Instruments List and Description

1. Infant Care Plans Checklist

The study was designed to survey mothers' plans for infant care through use of an "infant care plans checklist"; this instrument asked subjects to indicate a choice of preference of rearing plans for their infants including sitter, day care center, relative, or small group care. 1,432 mothers were surveyed in two large Columbus, Ohio hospitals between November 1, 1973, and March 15, 1974, at infant age 2-3 days.

As the data were collected for the survey activities of Phase I, they were organized, coded, transformed to machine-compatible form, and processed by computer. Cross-tabulations of data collected were performed, using services contributed by the Ohio State University Instructional and Research Computer Center and employing data analysis routines based on the Statistical Package for Social Sciences.

2. Data Card

During the survey activities of Phase I, the following information was collected on 1,432 mother-infant pairs:

a) infant sex
b) parity (birth order of the infant born)
c) race
d) marital status of mother
e) infant care plans of mother

3. Interview-Based Ratings

Interview questions were used to ascertain demographic information and to guide conversations with the mothers (see Appendix A). Five trained graduate research associates asked the questions in maternity ward interviews and during visits to the mothers' homes when their infants were three and eight months of age. During these interviews, information about maternal age, occupation, and socio-economic status was secured. Maternal employment status was checked at each contact to determine if, or when, the women started to work outside the home for financial compensation or returned to school.

Information to ascertain the following demographic variables was collected by trained interviewers from the semi-structured interview questions:

a) mother's occupation prior to pregnancy
b) father's (or head-of-household's) occupation
c) maternal educational attainment
d) paternal educational attainment
e) mother's age
f) name and ages of infant's siblings
g) number of months married
h) pregnancy planned

TABLE 8 (Con't.)

In addition, the interview questions were designed to gather information for 43 global variables developed principally by Howard A. Moss (Note 12) and supplemented by the Principle Investigator. Examples of these variables are: (1) degree of interest in affectionate contact with the baby; (2) confidence in maternal skills; (3) attitude toward non-maternal care; (4) degree of preference for active, responsive, and high "drive level" child; and (5) career orientation. Responses were rated on a nine-point scale for the relevant variable. (See Appendix A).

Child Care Inventory

In conjunction with the Moss-type interview, the Child Care Inventory was administered to mothers in their homes at infant age 8 months. Working mothers were asked questions about the type of child care used, the location of child care, the number of times they changed child care, how child care arrangements were located, the amount paid for child care, and the number of hours their infants were cared for by others while they worked outside the home or attended school. (See pg. 18 Appendix A).

Mothers who started to work or enrolled in school after their infant was eight months of age were asked the questions on the Child Care Inventory during a visit to the Campbell Hall Child Study Center located on The Ohio State University campus when their infant was approximately one year of age.

4. Observation of Specific Caregiving Activities, Ainsworth Maternal Care Ratings

Through naturalistic observation of mother-infant interaction in the home, quality of mothering was assessed at infant ages 3 and 8 months. Observed behaviors included such caregiving activities as diaper changing, dressing, feeding, and play behavior. These behaviors were written in narrative form and then rated, using Ainsworth's Scoring Guidelines.

Ainsworth and her colleagues devised two sets of variables to assess the quality of mothering: twenty-two nine-point scales developed for the first quarter of life, and four nine-point scales developed for the fourth quarter of life (Ainsworth, 1973). At the advice of Ainsworth (based on personal communication with the Principle Investigator, October, 1973) only 15 of the 22 first quarter of life variables were assessed; all four of the fourth quarter of life variables were assessed. (See pgs. 66 & 68 Table 18) for a complete list of maternal care variables used.)

5. Nancy Bayley Scales of Infant Development

The Bayley Scales of Infant Development are designed to provide a two part basis for the evaluation of a child's developmental status in the first two and one-half years of life. The three parts are considered complementary, each making a distinctive contribution to clinical evaluation.

(1) The Mental Scale is designed to assess sensory-perceptual acuities, discriminations, and the ability to respond to these; the early acquisition of "object constancy" and memory, learning, and problem-solving ability; vocalizations and the beginnings of verbal communication; and early evidence of the ability to form generalizations and classifications, which is the basis of abstract thinking.

TABLE 8 (Con't.)

Results of the administration of the Mental Scale are expressed as a standard score, the MDI, or Mental Development Index.

(2) The Motor Scale is designed to provide a measure of the degree of control of the body, coordination of the large muscles and finer manipulatory skills of the hands and fingers. As the Motor Scale is specifically directed toward behaviors reflecting motor coordination and skills, it is not concerned with functions that are commonly thought of as "mental" or "intelligent" in nature. Results of the administration of the Motor Scale are expressed as a standard score, the PDI, or Psychomotor Development Index.

For this study, the Mental Scale (MDI) and Motor Scale (PDI) were assessed, at infant ages three, eight, and twelve months. (From Manual for the Bayley Scales of Infant Development, The Psychological Corporation, 1969).

6. Time Sampling of Liquid and Solid Feedings

Mother-infant interaction was observed at infant ages three and eight months through use of a time-sampling procedure during infant liquid and solid feeding, employing 10-second intervals (approximately 8 seconds of observation and 2 seconds of recording) and styled after the work on infant feeding by Evelyn Thoman and with her advice and assistance (based on personal communication with the Principal Investigator, February, 1974). (See Appendix B for examples of time sampling record forms used.)

7. Maternal Attitude Scale

The Maternal Attitude Scale, developed by Cohler, Weiss, and Grunebaum (Note 8) and based upon Sander's theory (1962, 1964) of the mother-child relationship, assesses the child rearing attitudes of mothers of infants and very young children. The instrument consists of 233 Likert-type scale items and was administered to both working and nonworking mothers when their infants were eight months old. Subjects responded to each item according to the felt degree of agreement or disagreement on a six-point scale.

The Maternal Attitude Scale was scored by Dr. Bertram Cohler, The University of Chicago, on the following five summary factors*:

I) Appropriate Control of Child's Aggressive Impulses
II) Encouragement of Reciprocity
III) Appropriate Closeness
IV) Acceptance of Emotional Complexity of Child Rearing
V) Comfort in Perceiving and Meeting Infant's Needs

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*Factor scores are expressed in standardized form based on a larger normative sample, with mean = 0.000 and standard deviation = ± 1.000.

The following tabular summary of adaptive and maladaptive attitudes reflected in each of the five factors* is adapted from a table published in a paper by Cohler, Grunebaum, Weiss and Moran (1971).

Factor I:	Appropriate versus Inappropriate Control of Child's Aggression	Adaptive Attitude: Intent of aggressive impulse should be recognized but it is important to modulate expression of aggression by providing alternate channels. Maladaptive Attitude: Overly restrictive attitudes or, less commonly, overly permissive ones.
Factor II:	Encouragement versus Discouragement of Reciprocity	Adaptive Attitude: Babies can communicate with their mothers and mothers should encourage development of a relationship between mother and child. Maladaptive Attitude: Babies cannot communicate with their mothers and are unable to develop a reciprocal social relationship or to respond to appropriate cues from their mothers.
Factor III:	Appropriate versus Inappropriate Closeness with the Child	Adaptive Attitude: A mother can enjoy and care for a baby without sacrificing herself, without becoming overly binding or overly protective, and without yielding to the baby's demand for an exclusive relationship. Maladaptive Attitude: Pregnancy, delivery, and childcare are seen as burdensome, depleting, and destructive of self between the wish to be the sole caretaker and the wish to relegate all aspects of childcare to others.
Factor IV:	Acceptance versus Denial of Emotional Complexity of Childcare	Adaptive Attitude: Acceptance of ambivalent feelings about childcare, of some feeling of inadequacy as a mother, and of uncertainty regarding some aspects of childcare, without loss of self-esteem. Maladaptive Attitude: Denial of any concerns or doubts regarding childcare and of inadequacy in the maternal role, together with highly conventional and stereotyped beliefs and the feeling that mothers require little childcare assistance from others.
Factor V:	Feeling of Competence versus Lack of Competence in Perceiving and Meeting the Baby's Needs	Adaptive Attitude: Mothers can understand the infant's physical needs and meet them adequately. Maladaptive Attitude: Babies are unable to let others know what their physical needs are and mothers find it very difficult to understand and meet these needs.

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*Women with adaptive attitudes, as defined by the test authors, will score low on the first two factors (I and II) and high on the last three factors (III, IV, and V).

TABLE 8 (Con't.)

8. Stranger Approach Progression

The Stranger Approach Progression was administered by a trained observer when the infant reached eight months of age Designed to measure infant distress at the approach of a stranger, this instrument is administered by checking the appropriate behavior category on a continuum of infant behaviors. The behavior categories were: Infant facial expression - smile, neutral, wary, frown/pout, distress; Infant vocalization - continuous/babble, intermittant coo, silent, fuss, cry; Infant movement - reach out to stranger, lean forward, motionless, turn only face away, turn body away; and, Infant visual regard - continuous gaze to stranger, occasional gaze to stranger, continuous gaze aversion. Approach behavior of the stranger consisted of: 1) talk to mother; 2) briefly look at infant; 3) look at infant for a sustained period of time; 4) speak to and smile at infant; 5) approach infant; and 6) touch infant's hand, arm, or leg. There were no prearranged time limitations on the approach sequence; however, total time of the sequence was noted.

9. Brief Separation and Reunion

The Brief Separation and Reunion Form was used to measure infant distress at separation from mother and their naturally occurring reunion behavior. This instrument was administered in the home by a trained observer at infant age eight months. Greatest amount of separation time was three minutes; reunion behavior occurred sooner, however, if the infant became too highly distressed. One of four mutually exclusive separation behaviors was noted such as: "Infant exhibits no concern"; "Infant exhibits momentary concern"; "Infant frets"; and, "Infant activated." The researcher initiated no interaction with the infant but was appropriately responsive to the infant's initiations of interactions. When mother returned, a brief description of mother-infant behavior was noted and a judgment was made as to the appropriateness of the mother's behavior.

10. The Strange Situation Behavior Instrument

To standardize the measurement of attachment, Ainsworth developed the Strange Situation Behavior Instrument (Ainsworth and Wittig, 1969). This is a highly structured series of situations designed to measure several aspects of attachment behavior in a laboratory setting. Variables observed and recorded include the child's reaction to a strange situation and his subsequent exploratory behavior, his reaction to the presence and advances of a stranger with his mother present, and his reaction to the departure of his mother and her subsequent return. Behaviors scored include the child's proximity- and contact-seeking behaviors, his contact-maintaining behaviors, his proximity- and interaction-avoiding behaviors, his contact-resisting behaviors, and his search, cry, and withdrawal behaviors. (See Page 57 for an example of a scoring sheet used for the Strange Situation Behavior Instrument.)

TABLE 8 (Con't.)

11. Calendar Form

All mothers were contacted by telephone or letter when their infant was approximately one year old. They were asked if they had worked outside their home for financial compensation or attended school during the first 12 months of their infant's life.

The Calendar Form (Appendix C) was mailed to all working mothers requesting that they indicate their work status, occupation, and child care arrangements monthly for the first year of their infant's life.

1. Interview-based ratings
2. Observation-based ratings of maternal care
3. Factor scores obtained from factor analyses performed on the interview-based and observation-based ratings (items 1 and 2 above)
4. Time-sampled feeding behavior frequencies
5. Infant response to stranger approach behavior
6. Brief separation of infant from mother behavior
7. Strange Situation Behavior Instrument behavior codings.

Interview-based ratings. Semi-structured interviews were administered to mothers in the maternity ward and at home visits at 3 and 8 months infant age. The interview took about 1½ hours to administer. Interview questions were developed to acquire information about demographic characteristics and other variables focusing on the mother's interest in having a career, beliefs about infant rearing and problems associated with her employment status. Most of the interview guidelines and rating guidelines were developed by H. Moss (Note 12); 15 of the 43 rated variables were developed by E. Hock for use in this study. A listing of the variable names and the study phase in which they were employed is presented in Table 9, pages 25 and 26. Interview and rating guides are presented in Appendix A. Findings of earlier studies using several of these rated variables are reported in Robson, Pedersen and Moss (1969), Moss, Kenneth and Pedersen (1969), Moss and Robson (1970), and Moss and Jones (Note 13).

In the present study the trained interviewers recorded the mother's responses to the questions and made ratings on a 9-point scale for each variable. Interrater reliabilities on maternity ward interview data ranged from .32 to .90; six of the 22 rated variables had interrater

TABLE 9

TABLE OF INTERVIEW-BASED VARIABLES USED IN PHASES I, III, AND IV

*INTERVIEW-BASED VARIABLES	PHASE I (I Age 2-3 Days)	PHASE III (I Age 3-4 Months)	PHASE IV (I Age 8-9 Months)
*1) Hospital Stay Satisfying Experience	X		
*2) Paternal Involvement	X		
*3) Maternal Anticipation	X		
*4) Paternal Interest	X		
5) Experience Caring for Infant	X		
6) Dependence	X	X	
7) Perception of I as Active	X		
*8) Feeding Plans	X		
*9) Non-Maternal Care	X	X	X
10) "High Drive Level" Child	X	X	
11) Source of Stimulation (Orientation)	X		
12) Health and Well-Being	X	X	
13) Affectionate Contact with Infant	X	X	
14) Nurturance	X	X	X
15) Autonomy vs. Control	X	X	
16) Confidence in Maternal Skills	X	X	
17) Maternal Investment	X	X	X
18) Positive Attitude to Maternal Role	X	X	X
*19) Career Orientation	X	X	X
*20) Career History	X		
*21) External Control	X	X	
22) Source of Stim. (Voice)	X		

*Variable description and scoring guidelines developed by H. Moss (Note 12) except for those indicated by (*) that were developed by the Project Director, E. Hock, for use in this study.

TABLE 9 (Continued)

INTERVIEW-BASED VARIABLES	PHASE I (I Age 2-3 Days)	PHASE III (I Age 3-4 Months)	PHASE IV (I Age 8-9 Months)
23) Degree of Depression Following Pregnancy		X	
24) Disorganization Under Stress		X	X
25) Preference for Early Infancy		X	
26) Perception of Infant as Active		X	
27) Aversion to Fussy I		X	
28) Perception of Infant as Fussy		X	
29) Deg. I Regarded as Demanding		X	
30) Deg. I Enjoys Physical Contact		X	X
31) Deg. I Enjoys Social Interaction		X	X
32) Interest in Social Interaction with Infant		X	X
33) Deg. I Enjoys Visual Stimulation		X	X
34) Deg. I Seen in Positive Sense		X	X
35) Deg. M Feels I Is Pos. Attached to Her		X	X
36) Effects of I Characteristics on Maternal Role		X	X
37) Interpretation of Infant Discontent		X	
*38) Separation Stress		X	X
*39) Perc. I Distress at Separation		X	X
*40) Satis. w/Father Involvement		X	X
*41) Deg. I Discriminates Between Caregivers			X
*42) Deg. I Attachment to Objects			X
*43) M Knowledge Non-Mat. Care			X

*Variable description and scoring guidelines developed by H. Moss (Note 12) except for those indicated by (*) that were developed by the Project Director, E. Hock, for use in this study.

reliability coefficients of less than .65. Two raters scored 20 interviews; one rater was present at the original interview and the second rater listened to the tape recorded transcript. The poor quality of the cassette recordings probably contributed to the generally moderate degrees of rater agreement. The home visit interview interrater reliabilities were achieved by having two raters jointly attend 10 home visits. Interrater reliability coefficients on the variables ranged from .45 to .97; only six of the 30 variables rated after jointly-attended visits had interrater reliability coefficients of less than .80.

Observation-based ratings of maternal care. Ainsworth and her colleagues developed two sets of variables to assess the quality of maternal care through observations of mother-child interactions in the home (Ainsworth, 1973). Twenty-two nine-point scales were generated for the first quarter of an infant's life and four nine-point scales for the fourth quarter. At the advice of Ainsworth (personal communication, October, 1973) only 15 of her original 22 first quarter scales were thought useful for purposes of this study. Therefore, at the 3 month visit 15 of the maternal care variables were scored; at the 8 month visit 9 of the 15 first quarter variables were scored again and, in addition, the four fourth quarter variables were scored. These variables are labeled maternal care variables and are listed by phase in Table 18 of this report, pages 59 to 65. Reliability and validity of the scales have been assessed in a number of subsequent studies. Interrater reliability coefficients were reported for the first quarter variables as better than r = .85 (Ainsworth and Bell, 1969). Interrater reliability coefficients for the fourth quarter variables were reported by Ainsworth, Bell, and Stayton (1971) to be higher than r = .85 as well.

Although intercorrelations among the 22 first quarter variables were extremely high (r = .86), suggesting a possible halo effect, Ainsworth and Bell (1969) reported that at least six of the scales demonstrated construct validity in correlations with other infant care and feeding variables. Additional work on predictive validity is needed; however, from the high intercorrelations among the scales, it appears that fewer than 22 separate scales would be required to assess the various aspects of mothering characteristics, at least during the first quarter of life.

In spite of precautions taken to avoid halo effects, the fourth quarter variables also showed high intercorrelations ranging from .57 to .89. (Ainsworth, Bell, & Stayton, 1971). However, examination of scatter plots of scores on the four fourth-quarter variables revealed that all four variables appear to be closely related at the positive end but not at the negative end. Thus, whereas the sensitive mother also tended to be accepting, cooperative, and accessible, there was no corresponding tendency for the insensitive mother to be rejecting, uncooperative, and inaccessible. Thus, the high intercorrelations appear not to be solely a result of a halo effect.

Construct validity for the four fourth quarter variables was demonstrated by intercorrelations between the ratings of sensitivity, acceptance, cooperation, and accessibility and behavioral observations of four maternal caretaking behaviors including the duration of the mother's unresponsiveness to her infant's crying and the ratio of number of times mother acknowledged the infant's presence when entering the same room to the total number of entrances (Stayton and Ainsworth, 1973). Of the sixteen possible intercorrelations between the behavioral observations and the ratings, all were in the expected direction and 12 of the 16 were significant at the .05 level (Stayton and Ainsworth, 1973). Likewise, Stayton, Hogan, and Ainsworth (1971) reported that, of the 21 possible correlations between ratings of sensitivity, acceptance, and cooperation, and maternal behaviors such as frequency of verbal commands and infant variables such as IQ and frequency of compliance to commands, 11 were significant at the .05 level. Finally, Ainsworth, Bell, and Stayton (1971) found that the four fourth-quarter scales discriminated among infants' performance in the Strange Situation Behavior Instrument.

In this study maternal caregiving behavior was observed as the mother went about her daily routine during home visits at 3and 8 months infant age. The researcher that visited the home in most cases had talked with the mother during her stay in the maternity ward. Upon arrival at the home the visitor chatted with the mother and encouraged her to pursue her normal caretaking routine. The visitor observed during feeding, diapering, dressing, and during periods of playful interaction. The sequence of these events was flexible; most occurred naturally during the course of the 4-hour visit without prompting. (Generally, all the home visit procedures were flexible and instrument administration, other than the Stranger Approach Progression, could occur at any time convenient to mother and infant.) The visitor recorded in writing narrative reports of her observations of the mothers' behaviors and after leaving the home rated the quality of maternal caregiving following the detailed scoring criteria developed by Ainsworth (1973). Interrater reliability coefficients on the maternal care variables (calculated after two judges jointly attended 10 home visits and independently scored those cases) ranged from .52 to 1.00; most coefficients exceeded .70.

Factor scores obtained from factor analyses performed on the interview-based and observation-based ratings. The following discussion of data reduction procedures is presented here because the derived factor scores were entered into data analyses (along with selected original variables) and are considered valid measurements of subject characteristics. (The Results section presents findings resulting from statistical analyses performed on the factor scores.)

In order to reduce the data obtained from the interview-based ratings (Moss/Hock) and the observation-based ratings (Ainsworth) to a structure of related variables, factor analyses were performed on the interview and observation-based ratings from phases I, III, and IV. Rating scores from all subjects with complete interview data from phases I, III, and IV were included, with the exception of data from those subjects unavailable for phase IV data collection. In all, data from 164 subjects were included in the factor analyses. For the phase I factor analysis, the 22 interview-based variables (from the hospital interview) were included, while in the phase III and IV factor analyses, both the interview and observation-based, Ainsworth variables were utilized. Thus, in the phase III factor analysis, a total of 45 interview and observation-based variables were used while in the phase IV factor analysis, 32 variables were used.

Computer analysis was by the BMD03M program utilizing orthogonal rotation and the method of principal components. Each correlation matrix was rotated to produce no more than eight factors each with eigenvalues greater than or equal to 1.0. Phase I factor analysis (based on 22 phase I interview variables) yielded a total of seven factors with eigenvalues greater than 1.0; these seven factors together accounted for 62% of the variance. Phase III factor analysis (based on 30 interview variables and 15 Ainsworth variables from phase III) yielded a total of eight factors with eigenvalues greater than 1.0; these eight factors together accounted for 59% of the variance. Phase IV factor analysis (based on 19 interview variables and 13 Ainsworth variables from phase IV) yielded a total of seven factors with eigenvalues greater than 1.0; these seven factors together accounted for a total of 66% of the variance. Tables 10, 11, and 12 list the factors, together with variables with loadings greater than .50 on each factor. Names for each factor were determined primarily by examining the operational definitions for those variables which loaded most highly on each of the respective factors.

Time-sampled feeding behavior frequencies. Several respected students of mother-infant interaction have informally suggested that the feeding situation offers a most informative capsule of interactive behavior. Also, the Principal Investigator after observing many mother-infant pairs noted that mother and infant characteristics evidenced during feeding seem prototypic of interaction seen in other settings. Thus, the feeding situation was the context of choice in this study for the collection of raw data based on observation of discrete, pre-determined behaviors using a time-sampling technique. The mother and infant behaviors to be noted were selected after reviewing the work of Beckwith (1972) and the work of Thomen (Note 14) & at her advice and assistance (based on personal communication, February 1974). The pre-determined, defined behaviors were listed (see recording forms in Appendix B) and their occurances noted if they occurred in any 10-second interval. Observation of feeding behaviors took place at the 3 and 8 month infant age home

TABLE 10

Phase I Factor Analysis Interview-Based Variables

Original Variable Labels	Factor Loadings
Factor I Parental Involvement Perinatally	
Paternal involvement	+.88
Maternal anticipation	+.63
Paternal interest	+.89
M as a source of stimulation (voice)	+.54
Eigenvalue 4.11	
Cumulative variance .19	
Factor II Interest in Maternal Role	
Nurturance	+.70
Maternal investment	+.76
Positive attitude towards maternal role	+.71
Career orientation	-.52
Eigenvalue 2.40	
Cumulative variance .30	
Factor III Confidence in Child Care Skills	
Experience in caring for infant	+.82
Confidence in maternal skills	+.86
Eigenvalue 2.10	
Cumulative variance .39	
Factor IV Energy Investment	
Hospital stay as a satisfying experience	+.74
Degree of preference for active infant	-.63
Eigenvalue 1.64	
Cumulative variance .47	

TABLE 10 (Con't.)

Factor V
Independence; Internal Control - Source of Control

Dependence	-.86
External control	-.90

Eigenvalue 1.23
Cumulative variance .52

Factor VI
Infant Centered in Interaction

Degree of interest in affectionate contact with infant	+.75
Autonomy versus control	+.51

Eigenvalue 1.08
Cumulative variance .57

Factor VII
Child-Centered Orientation to Environment

Feeding plans	+.58
Mother as a source of stimulation (orientation)	+.69

Eigenvalue 1.05
Cumulative variance .62

TABLE 11

Phase III Factor Analysis Interview- and Observation-Based Variables

Original Variable Labels	Factor Loadings
Factor I Positive Mother-Infant Interaction	
Nurturance toward infant	+.57
Degree of maternal interest in social interaction with infant	+.58
Mother's delight in baby	+.82
Mother's acceptance of baby	+.60
Mother's attitude toward baby as evidenced by her excellence as an informant	+.77
Appropriateness of mother's initiations of interactions	+.78
Amount of physical contact	+.67
Quality of physical contact in holding baby	+.70
Effectiveness of mother's response to baby's crying	+.59
Amount of visual contact	+.72
Amount of auditory and vocal contact	+.79
Frequency of play interaction	+.81
Appropriateness of play interaction	+.78
Eigenvalue 11.04	
Cumulative variance .24	
Factor II Acceptance of Infant and Maternal Role	
Degree of depression following pregnancy	-.69
Proneness to disorganization under stress of maternal experience	-.67
Degree of aversion to fussy or irritable baby	-.60
Perception of baby as irritable or fussy	-.68
Degree to which baby is regarded as demanding	-.65
Confidence in maternal skills	+.59
Degree that baby is seen in a positive sense	+.59
Eigenvalue 4.06	
Cumulative variance .34	

TABLE 11 (Con't.)

Factor III
Mother's Belief in Her Own Irreplacability

Attitude toward non-maternal care	+.70
Degree to which mother feels her baby is positively attached to her	+.58
Separation stress	-.79
Perception of infant's distress at separation	-.68

Eigenvalue 2.85
Cumulative variance .40

Factor IV
Sensitivity and Cooperation in Feeding

Synchronization of mother's interventions with baby's rhythms	+.57
Determination of amount of food and end of feeding	+.76
Mother's regard for baby's preferences in kind of food	+.63
Mother's synchronization of rate of feeding to baby's pace	+.73

Eigenvalue 2.13
Cumulative variance .45

Factor V
Dependency; External Control

External control with respect to career	+.78
Degree of dependency	+.70

Eigenvalue 1.90
Cumulative variance .49

Factor VI
Mother's Perception of Infant as Cuddly

Degree to which baby enjoys physical contact	+.74
Degree to which baby enjoys visual stimulation	-.52

Eigenvalue 1.65
Cumulative variance .52

TABLE 11 (Con't.)

Factor VII

Preference and Perception of Infant as Active

Degree of preference for active, responsive, and high "drive level" child	+.76
Perception of infant as active, responsive, and high "drive level" child	+.67

Eigenvalue 1.48
Cumulative variance .56

Factor VIII

Mother's Perception of Her Role Uninfluenced by Infant

Effects of infant characteristics on maternal role	-.75

Eigenvalue 1.44
Cumulative variance .59

TABLE 12

Phase IV Factor Analysis Interview- and Observation-Based Variables

Factor I
Quality of Mothering

Original Variable Labels	Factor Loadings
Nurturance toward infant	+.62
Degree that baby is seen in a positive sense	+.54
Positive attitude towards maternal role	+.56
Mother's delight in baby	+.74
Appropriateness of mother's initiations of interactions	+.78
Mother's synchronization of rate of feeding to baby's pace	+.72
Quality of physical contact in holding baby	+.53
Amount of visual contact	+.57
Amount of auditory and vocal contact	+.64
Frequency of play interaction	+.69
Appropriateness of play interaction	+.68
Cooperation versus interference	+.82
Accessibility versus ignoring and neglecting	+.81
Acceptence versus rejection	+.72
Sensitivity to signals	+.84

Eigenvalue 11.12
Cumulative variance .35

Factor II
Maternal Separation Anxiety

Original Variable Labels	Factor Loadings
Attitude to non-maternal care	-.81
Career orientation	+.59
Separation stress	+.77
Perception of infant's distress at separation	+.50

Eigenvalue 2.52
Cumulative variance .43

Factor III
Maternal Role Investment

Original Variable Labels	Factor Loadings
Degree to which baby enjoys social interaction	+.67
Positive attitudes towards maternal role	+.58
Investment in maternal role	+.51
Effects of infant characteristics on maternal role	-.72

Eigenvalue 2.12
Cumulative variance .49

TABLE 12 (Con't.)

Factor IV
Stoicism

Proneness to disorganization under stresses of maternal experience	-.57
Degree of infant attachment to objects	+.75

Eigenvalue 1.63
Cumulative variance .54

Factor V
Pleasurable Physical Contact

Degree to which baby enjoys physical contact	+.87
Amount of physical contact	+.67
Quality of physical contact	+.58

Eigenvalue 1.46
Cumulative variance .59

Factor VI
Mother's Belief in Her Own Irreplacability

Degree to which mother feels baby is positively attached to her	+.74
Perc. of Infant Distress at Separation	-.59
Degree to which baby discriminates between caregivers	-.76

Eigenvalue 1.33
Cumulative variance .63

Factor VII
"Visual Stimulation"

Degree to which infant enjoys visual stimulation	+.83
Satisfaction with father involvement	+.50
Amount of visual contact	+.53

Eigenvalue 1.04
Cumulative variance .66

visits. The behaviors scored at these two times were different and age-appropriate, the 3-month focusing on liquid feeding and the 8-month on solids. The home visits were scheduled carefully so that the visitor would be present at a naturally occurring feeding time. Instructions to the mother included a polite message conveying the idea that the visitor/observer could not engage in conversation during feeding because of her interest in accurately recording and learning about the baby's behavior.

Recording began with the first mouthful and ended only after the food was removed (temporary breaks for burping or a change of foods were scored as "time-outs" but the timing was continued). Individuals differed greatly in actual length of feedings, ranging from 10 minutes to around 60; the average time was about 20 - 25 minutes. Data was scored separately for each behavioral category by adding the number of 10-second blocks in which a behavior occurred; as well, all time blocks where actual feeding occurred (time-outs were omitted) were summed; then a percentage score was calculated by dividing the number of total feeding time blocks into the total number of behavior time blocks. Thus the resulting data described, for each of the behaviors exhibited by mother and infant, what percentage of the total feeding time was occupied by a certain behavior. Interobserver reliabilities were calculated after two observers jointly observed 10 mother-infant pairs. The raw data collected by both observers were converted to produce a percentage score for each behavior; correlational analyses of the percentage scores produced coefficients reflecting observer agreement that ranged from .12 (on fuss) to 1.00. Most coefficients were greater than .80 (only five were less than .80). After "fuss" the next lowest coefficient was

.50 for "drowse", a state variable; all other coefficients were greater than .65.

Infant response to stranger approach behavior. In order to assess attributes of the infant's social development, a technique was developed for this study to characterize infants' responses to a stranger's approach at 8 months of age. The intent of this activity was not only to gain insight into individual differences at 8 months of age, but to be able to gain insight into the continuity of response to stranger approach by comparing the 8-month data to the 12-month data obtained from the Strange Situation Behavior Instrument (Ainsworth and Wittig, 1969). The development of the technique used in this study at the 8-month home visit was guided by several earlier works. Infant reactions to stranger approach have been studied using various standardized sequences. In general, the stranger enters the infant's visual field, gradually approaches the infant, and ends the approach with play, a touch, or picking up the infant. However, the actual steps incorporated into the sequence, the timing of these steps, the distances from which the baby is approached, the setting of the approach, the location of the mother with respect to the baby, and the behaviors which succeed the initial approach differ from experiment to experiment. As well, the infant's behavioral responses are measured in various ways in the different studies. Schaffer (1966) and Schaffer and Emerson (1964) assigned a point score of 1 - 6 to each of the steps and noted the step in which the infant first showed fear. A fear reaction was defined as a whimper, cry, lip tremble, screwed-up face, a looking or turning away, a drawing back, running, or crawling away or a hiding of the face. If the infant manifested any of these behaviors at the first sight of the stranger he was given a score of 6; if he did not manifest any of these behaviors until he was picked up, he was given a score of 1. A zero score was noted for those infants who showed no signs of fear. In addition to the score rating, the intensity of the behavioral response was noted, and, as this approach sequence was repeated every 4 weeks during the infants' first year of life, the age of onset of fear was noted. The results of this observational sequence were 92% in agreement with the responses given by the infants' mothers in answer to the question, "Does he or does he not show fear?"

Paradise and Curcio (1974) coded on a five-point scale (also used in a Morgan and Riccuiti study /1969/) the infant's facial expression and vocalization score. Reliability coefficients were determined to be .97 for facial expression and 1.00 for vocalization.

Scarr and Salapatek (1970) scored each step on a 3-point scale of fear: 1 - no evidence of fear; 2 - sober, cautious, quits ongoing activity; and 3 - fretting, crying, and fleeing to mother. These individual scores were then summed across the six steps to yield a total fear score for their 2- to 23-month-old infants.

Moss, Robson, and Pedersen (1969) studied 8 and 9½ month-old-infants in their homes. After entering the home, two strangers seated themselves across the room from the infant who was seated on his mother's lap. After two minutes the first stranger slowly and soberly approached the infant and took him from his mother for a minute, looking into his face while holding him. This sequence was repeated by the second stranger at the end of the visit. After the approaches the two strangers independently rated the infants on two variables for each approach sequence. Fear of Stranger was rated on a 13-point scale ranging from active avoidance accompanied by crying and refusal to be held, to active approach with smiling, vocalizing and seeking physical contact with the experimenter. Interrater reliability based on four scores averaged .89 for this variable. The degree to which the infant's gaze averted the experimenter's face was rated on a 7-point scale based on the frequence, and duration which the infant looked away from the stranger. Interrater reliability, based on four scores, averaged .85 for this variable.

The technique used in the present study was styled after the work discussed above. In this study, the infants, age 8-months, were approached in a natural way by the stranger when she first entered the infant's home. While the infant was held by the mother, the stranger: 1) talked with the mother; 2) briefly looked at the infant; 3) looked at the infant for a sustained period of time; 4) spoke and smiled at the infant; 5) approached the infant while continuing to smile and talk; and 6) touched the infant's hand, arm or leg. At each of these six steps the stranger/visitor noted the infant's initial response of facial expression, vocalization, movement, and visual regard by checking the appropriate behavioral category on a checklist of behaviors. The behavioral categories were coded as follows: infant facial expression - smile, neutral, wary, frown/pout, distress; infant vocalization - continuous/babble, intermittent coo, silent, fuss, cry; infant movement - reach out to stranger, lean forward, motionless, turn only face away, turn body away; and infant visual regard - continuous gaze to stranger, occasional gaze to stranger, and continuous gaze aversion. There was no time limitation on any step in the prearranged approach sequence. The record form used is presented in Table 13 and lists the steps in the stranger approach sequence and the infant behaviors noted. The strangers were instructed to time their rate of approach using cues from the infant to signal their advances. Each progressive

TABLE 13

Start Time ____________________

Hock OCD-CB-490
Stop Time ________________

STRANGER APPROACH PROGRESSION
Infant Behavior Record Form

	I Meet M & I (I Sees Str.), Talks With M	II Brief Vis. Reg. of I	III Sustained Visual Reg. of I	IV Speak to I While Looking & Smiling	V Approach I Cont. to Smile & Talk	VI Touch I's Hand, Arm, or Leg - Pat
A. I Facial Expression ratings:						
1 Smile						
2 Neutral						
3 Wary						
4 Frown/Pout						
5 Distress						
B. I Vocalization ratings:						
1 Continuous/Babble						
2 Intermittent Coo						
3 Silent						
4 Fuss						
5 Cry						
C. I Movement ratings:						
1 Reach Out To Stranger						
2 Lean Forward						
3 Motionless						
4 Turn Only Face Away						
5 Turn Body Away						
D. I Visual Regard ratings:						
1 Continuous Gaze to Str.						
2 Occasional Gaze to Str.						
3 Continuous Gaze Aversion						

step was therefore not attempted until the infant exhibited no distress resulting from the current one. The total time of the approach sequence was noted, that being from the infant's first glimpse of the stranger to his initial response to being touched by the stranger.

The Stranger Approach Progression was scored on several dimensions. The infant behaviors listed under each major heading (i.e., facial expression, vocalization, movement, and visual regard) were assumed to be on a continuum of "exhibited wariness" with the two end points defined as welcoming, affiliative posture contrasted with clear avoidance and protest. The five behaviors listed under each of the categories of facial expression, vocalization, and movement were thus accorded 1 through 5 ratings with 1 representing the affiliative end of the scale. The three behaviors under visual regard were assigned 1 through 3 ratings with 1 again representing the affiliative behavior. Thus, an infant was scored on each of the four main behavioral categories according to his initial response to each of the six steps in the progressive sequence, giving each infant 24 scores. In addition, the 24 scores were summed providing one score thought to represent the infant's general disposition toward the stranger's approach. All 25 scores (plus the total time necessary to complete the sequence) were coded for each infant and are in computer compatible form. The only score used in the data analyses for this final project report was the total score that was derived from summing the 24 behavior based scores.

Brief separation of infant from mother behavior. In order to systematically assess the infants' reactions to brief separations from their mothers in the home, a technique was developed to systematize observational and recording tasks. The intent of assessing responses to a brief separation was two-fold: to relate this facet of infant behavior to other attributes measured at 8 months and to relate brief separation behavior at 8 months of age to responses to separation from mother at 12 months of age. The development of the "Brief Separation" observational and recording guidelines for this study was guided by several earlier studies. The studies investigating an infant's reaction to his mother's exit and her subsequent return have been conducted in a number of ways. In general, these studies may be categorized as to the location in which they took place, and the amount of control which the researchers imposed upon the experimental situation. The discussion which follows is organized around these considerations. Naturalistic observations in the home, structured observations in the home, and structured observations in a laboratory setting will be discussed.

Ainsworth and her associates have conducted naturalistic observational studies in the home environment. These observations were conducted within the context of a longitudinal study of the infants' first year of life. Reseachers visited the infants for four hours in their homes at 3-week intervals; narrative reports were made of the infant's behaviors. These reports were then coded for, among other things, each instance when a person left or entered the room in which the infant was present. The recorders noted the following: identity of the person exiting, behavior of the person exiting, location of the infant, infant's ongoing activity and state prior to the person's departure or entrance, infant's other companions if any, and the infant's subsequent reactions. Infant behaviors were recorded as frequency counts which in turn were converted into percentages expressing the proportion of time the behavior occurred in all episodes of a person's exiting or entering a room. These behaviors were crying, following, crying or mixed greeting and positive greeting. The latter category was differentiated into seven types: smile, vocalize, bounce or jiggle, reach, lean, strain, and stand up. Locomotor approach and a waving of the arms was also noted. The intensity of positive greeting behavior assessed on a five-point scale yielded interrater agreement of .94 (Ainsworth, Bell, and Stayton, 1972; Stayton and Ainsworth, 1973; Stayton, Ainsworth, and Main, 1973).

Littenberg, Tulkin, and Kagan (1971) loosely structured the observational sequences they utilized in studying the cognitive components of separation anxiety of 11-month-old infants. The observational sequence, which took place in the home, began with the mother and infant together in a room for 10 minutes (the observer positioned himself so as not to be visible to the infant). At a signal, the mother said goodbye and exited the room by a familiar or unfamiliar door. The mother returned after two minutes and again spent 10 minutes with her infant before she exited a second time, this time by an unfamiliar exit (the order was reversed for one-half of the infants with the mother first exiting by an unfamiliar door.) The infant's responses were studied for a second two-minute period with respect to the following behaviors: vocalize, fret, cry, stare at exit, and crawl to locus where mother exited.

Schaffer and Emerson (1964) devised seven situations in which to observe the mother's separation from the infant: 1) infant left alone in the room; 2) infant left with other people; 3) infant left in his pram outside of the house; 4) infant left in his pram outside shops; 5) infant left in his cot at night; 6) infant is put down after being held in adult's arms or lap; and 7) infant is passed by while in his cot or chair. These behaviors were observed periodically as the infants grew from five weeks to one year of age and then a final time at 18 months. The intensity of the responses were rated on a four-point scale: 0) no protest; 1) protest occurs, but qualified with respect to both their intensity with which it is expressed and their regularity; 2) protest occurs, but qualified in respect to either its intensity or its regularity; and 3) protest occurs, with no qualifications for all of the seven situations. Raters achieved 93% agreement on these scores. In addition, observation data agreed 92% with maternal response to questions inquiring about infant protest in these types of situations.

The studies discussed above guided the development of the "Brief Separation" assessment utilized in the present study. In this study a naturally occurring separation event in the home served as the context of choice for data collection. The home visitor observed the 8-month-old infants' responses to a brief separation and reunion with their mothers. After the infant seemed completely at ease with the presence of the stranger (research assistant), the mother was asked to attract the attention of the infant (who was seated on the floor, not in contact with the mother), tell him she would be right back (no specific terms were prescribed), and leave the room for two or three minutes unless the infant became unhappy. The research assistant initiated no interaction with the infant at this time but remained responsive to his interactions. During this time the stranger noted the presence or absence of the following four behaviors: infant exhibits no concern; infant exhibits momentary concern, i.e., looks after mother or ceased ongoing activity; infant frets, i.e., exhibits sporadic vocal fuss, distressed facial expression or is highly distressed; and infant activated to search and follows mother. The procedural and scoring guidelines used in this study are presented in Table 14. The four statements of behavioral characteristics, for scoring purposes, were viewed as mutually exclusive; if the infant cried yet followed the mother, the 4th statement was checked indicating activation.

Strange Situation Behavior Instrument behavior codings. The primary aim of this study was to identify and analyze factors that appeared to influence the socio-emotional development of the infant. In considering socio-emotional development, particular attention was given to the infant's behavior directed toward his mother and a stranger. When the infants in this study were 8 months old they were observed in their homes as a stranger approached them (Stranger Approach Progression) and when their mothers left the room (Brief Separation). At 12-months of age in a laboratory setting, the infants were observed again as a stranger approached and their mothers left the room. Data from these 8- and 12-month observations was coded in such a manner as to provide insights into the infant's "affiliative" vs. "wary" reception of a stranger and his "at ease" vs. "distressed" response to his mother's brief absence.

The detailed scoring of the 12-month observational sequence provided additional information, in that the infant's expression of petulant, angry (anti-affiliative) behavior toward the mother and stranger were coded as well as fine points of positive, pro-social interaction. The 12-month observational sequence and scoring guidelines were developed by Ainsworth and Wittig (1969)and together are generally referred to as the Strange Situation Behavior Instrument (SSBI).

The Strange Situation Behavior Instrument is a structured observational technique which elicits a wide range of infant behaviors pertinent

TABLE 14

Procedural Guidelines and Record Form For Brief Separation and Reunion

Infant Response to a Brief Separation from Mother

To be undertaken when infant is completely at ease with Stranger and is seated on floor not in physical contact with mother. Explain to mother that you're interested in seeing if the infant feels comfortable with you alone, i.e., when mother is in another room. Tell her that you want her to go to another room and stay for 2 or 3 minutes unless the infant gets unhappy. Then ask mother to get her infant's attention and tell the infant that she'll be right back (specific terms don't matter) and have her leave the room to go to another room in the house.

Stranger should behave naturally in response to the infant's initiation of communication but should not initiate interaction with infant.

After 2 to 3 minutes (or whenever infant grows distressed if less than 2 minutes), mother will return; note naturally occurring mother and infant behavior. (*If* mother should come back and reenter quietly, ask her to tell her infant that she's back and greet him/her as she ordinarily would.)

Indicate which of the following behavioral descriptions is most applicable by placing a "1" in the appropriate space; a "0" is to be recorded in the other three spaces.

__________ Infant exhibits no concern.

__________ Infant exhibits momentary concern, i.e., looks after mother, may exhibit cessation of on-going activity.

__________ Infant frets: vocal fuss - sporadic, distressed facial expression, or highly distressed.

__________ Infant activated to search - if ambulatory, infant follows mother.

to attachment and its balance with exploration. The instrument was originally devised and is most normally used with one year old infants though it has been used with children up to 3½ years of age (Blehar, 1974). The instrument consists of eight episodes which represent everyday occurrences which are compressed in time and relocated into an environment, usually a laboratory setting, novel to the infant. Through the administration of this standardized sequence of episodes, observers are able to study: a) the child's use of his mother as a secure base from which to explore the world; b) the child's response to his mother's leaving the room and her return; and c) the child's response to a stranger (Ainsworth and Wittig, 1969). The infant and his mother are confronted with eight episodes each designed to elicit responses related to attachment. The episodes are structured to represent the everyday situations to which an infant is normally exposed. A brief summary of the episodes follows, by episode number:

1) the infant is acclimated to the surroundings (30 seconds);
2) intended to elicit exploratory behavior (3 minutes): the mother puts her baby down and sits on a chair;
3) entrance of a female stranger, a friendly but unknown person, who approaches the mother and then the baby (3 minutes). (The baby should notice that the mother approves of the stranger).
4) the first separation episode: the mother unobtrusively departs (3 minutes; the episode is curtailed if the baby seems very unhappy); the stranger remains;
5) reunion episode: the mother returns; the stranger slips out (variable timing, depending on how long the mother needs to reacclimate her child);
6) the baby is left entirely alone: the mother says, "Good-bye; I will be right back" (3 minutes);
7) the stranger enters (3 minutes);
8) The second reunion episode (variable timing, as in episode 5).

The test will take approximately twenty minutes to administer to each subject.

Behavior is observed, tape-recorded in narrative form, and later transcribed. The wide use of this technique for a number of different experimental purposes has resulted in a diversity of methods of measurement. In general, these approaches to measurement may be classified into three categories: 1) frequency and/or incidence checks of specific behaviors; 2) scores of five specific attachment behaviors determined on the basis of the strength, frequency, duration, and latency of specific behaviors and their contingency to the adult's behaviors; and 3) classifications of infants into three categories based primarily on their manifestation of attachment behaviors in the episodes in which they are reunited with their mothers. Various investigators have chosen to use one or a combination of these measurement methods. The second scoring description described above was the type of system used in the present study. In this scoring system five specific behavioral categories are coded. Ainsworth has defined these five behavioral categories as representative of attachment behaviors that promote or inhibit proximity or contact. The five behavioral categories are labeled as follows: contact-maintaining, proximity-seeking, contact-resisting, proximity-avoiding and search behavior. Ainsworth and Bell (1970) define these categories in terms of specific behaviors as follows:

Contact-maintaining. Clinging, embracing, clutching, holding-on and resisting release by intensified clinging after contact has been established; or, after contact has been lost, turning back and reaching or clambering up.

Proximity-seeking. Active behaviors such as approaching and clambering up, active gestures such as reaching, intention movements such as partial approaches, and directed vocal signals.

Contact-resisting. Angry, ambivalent attempts to push away, hit or kick the adult who seeks to make contact, squirming to get down having been picked up, throwing or pushing away toys offered by the adult, angry screaming, pouting, cranky fussing, or petulance.

Proximity-avoiding. Near and distant interaction involving ignoring the adult, turning or moving away, pointedly avoiding looking at the adult in a situation which ordinarily elicits an approach, greeting, or at least watching.

Search behavior. Following the mother to the door, remaining oriented to the door or glancing at it, going to the mother's empty chair or glancing at it.

These behavioral categories are scored on a seven-point rating scale based on the strength, frequency, duration, and latency of the specific behaviors included within these definitions (1 = low intensity, 7 = high intensity). Ainsworth and Bell have developed (Note 2) coding guidelines.

Numerous studies have used this method of scoring (Ainsworth, Note 1; Ainsworth and Bell, 1970; Ainsworth, Bell and Stayton, 1971; Blehar, 1974; Brookhart and Hock, Note 6). Blehar (1974) combined the categories of contact-maintaining and proximity seeking. Keller, et al. (Note 10)did not use the seven-point rating scale, but rather rated the behaviors on a five-point scale.

Reliability studies have yielded the following results: Ainsworth and Bell (1970) determined reliability coefficients (rho) for two independent observers for 14 randomly selected cases for behaviors directed toward the mother - proximity-seeking .93; contact-maintenance .97; proximity-avoidance .93; contact-resistance .96; search behavior .94. Interrater reliability for two independent raters for twenty-six transcripts ranged from .84 to .88 for these behaviors directed toward the mother and the stranger (Brookhart and Hock; Note 6). Blehar (1974) reported interobserver agreement separately for behaviors directed to the mother and the stranger, for the mother: proximity-seeking .97; contact-resistance .93; proximity-avoidance .94; and search behavior .98; for the stranger: proximity-seeking .98; contact-resistance .92; and proximity-avoidance .88. Ainsworth (Note1) determined significant correlations for contact maintenance (.56) and proximity-avoidance (.66) in the reunion episodes and proximity-seeking (.56), search behavior (.47), and contact-resistance to stranger (.42) in pre-separation episodes in two administrations of the Strange Situation Behavior Instrument separated by a two-week interval.

The Strange Situation Behavior Instrument was administered in the present study in the standardized manner. Appointments were made with the mother by telephone; letters were then sent to the home explaining briefly what was to occur. The mothers brought their infants to the child study center; brief instructions were given to the mother by a person acting as the director. The mother and infant were led into the testing room and the sequence was begun. An outline of the sequence of events is presented in Table 15.

Throughout the sequence the director timed the episodes and signaled the entrances and exits of the mother and stranger. A second person, from behind a one-way mirror, recorded a detailed narrative account of

TABLE 15

EPISODES IN THE STRANGE SITUATION*

Episode	Persons Present	Duration	Entrances and Exits
1	Mother, baby, Director	30 seconds approximately	M, B, and D enter room D leaves room
2	Mother, baby	3 minutes	
3	Stranger, mother, baby	3 minutes	S enters room
4	Stranger, baby	3 minutes**	M leaves room
5	Mother, baby	Variable	M enters, S leaves
6	Baby alone	3 minutes**	M leaves room
7	Stranger, baby	3 minutes**	S enters room
8	Mother, baby	Variable	M enters, S leaves

---

* Ainsworth and Wittig, 1969.

** Episode is curtailed if the baby is highly distressed.

the infant's activities; a microphone system permitted auditory transmission of the infant's vocalizations.

The laboratory testing room measured 12 feet by 10 feet; it was carpeted, but unfurnished except for two chairs placed 7½ feet apart, parallel to the observation mirror and facing one another; the infant's toys (doll, wagon with blocks, toy telephone, and tambourine and striker) were placed midway between them. The carpet was marked into 18 inch squares to permit recording of the participants' locations.

The taped recording of the narrative account was later transcribed; an asterisk was used to indicate the 12-second time interval which had been simultaneously recorded with the infant's behaviors. These transcripts were coded according to Ainsworth's standardized coding procedures regarding infant attachment behaviors to the mother and the stranger. Contact maintenance, proximity seeking, contact resistance, and proximity avoidance were coded with respect to both adults; search behavior was coded with respect to the mother only.

Descriptions of these behavioral categories were presented above in this chapter; a rating scale of 1 to 7 was used, 7 representing the high intensity end of the scale.* In addition to the five behaviors scored following Ainsworth and Bell's guidelines (Note 2), cry and withdrawal behaviors were coded on scales of 1 to 7 developed by the Principal Investigator for use in this study. For cry, a score of 7 indicated that the infant cried hard and continuously; for withdrawal, a 7 indicated that the infant exhibited passive withdrawal throughout the episode. Cry and withdrawal were scored for episodes IV, VI, and VII.

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*The coding guidelines used in this study for scoring CM, PS, CR, PA, and SB were obtained from M.D.S. Ainsworth, who is presently at the Dept. of Psychology, University of Virginia. Three minor changes in the Ainsworth document were made by the Principal Investigator to simplify coding procedures for purposes of the present study. The manual for coding the SSBI with the above modifications noted has not been appended in this document (due to its bulk). Interested readers may obtain the complete document from the proposal for this study (OCD-CB-490) or from the Principal Investigator.

To summarize the scoring, contact maintaining, proximity seeking, contact avoidance, and proximity avoidance when directed to the mother were scored in episodes II, III, V, and VIII; when directed to the stranger these four behavioral categories were scored in episodes III, IV, and VI. Search behavior, cry and withdrawal were scored in episodes IV, VI, and VII. Thus each infant received 37 Strange Situation Behavior Instrument scores. The recording form for the Strange Situation Behavior Instrument scores is presented in Table 16.

The typed transpcript of each infants' Strange Situation Behavior Instrument behavior was given to two coders who independently coded the behaviors resulting in two sets of scores for each infant. The mean of the two scores from each rater was the score utilized in data analysis. Interrater reliability for the two independent coders using the transcript of 80 randomly selected cases ranged from .88 to 1.00.

Data Collection Schedule

This study collected data from mothers and infants over a 12-month period. Table 17 depicts the character and timing of the data collection effort. To supplement Table 17, in Table 18 the data collection instruments and variables studied are listed in greater detail and are listed in the order that they are collected.

TABLE 16

PHASE V
Strange Situation Scoring Sheet

The Strange Situation: Coding Sheet

cm=contact maintaining
ca=contact avoiding
ps=proximity seeking
pa=proximity avoiding
wd=withdrawal
sb=search behavior

	7	6	5	4	3	2	1
Episode II (interaction with mother)							
cm							
ps							
ca							
pa							
Episode III (interaction with mother)							
cm							
ps							
ca							
pa							
Episode III (interaction with stranger)							
cm							
ps							
ca							
pa							
Episode IV (interaction with stranger)							
cm							
ps							
ca							
pa							
sb							
cry							
wd							

	7	6	5	4	3	2	1
Episode V (interaction with mother)							
cm							
ps							
ca							
pa							
Episode VI							
sb							
cry							
wd							
Episode VII							
sb							
cry							
wd							
Episode VII (interaction with stranger)							
cm							
ps							
ca							
pa							
Episode VIII (interaction with mother)							
cm							
ps							
ca							
pa							

Vital Statistics:

Baby # ________

Recorder ________

Coder ________

TABLE 17

DATA COLLECTION SCHEDULE

Scheduled Times and Sample Size	Activity or Scale	Data Gathering and Treatment
Phase I (November 1, 1973 to March 15, 1974)		
Maternity Ward Infant Age: 1 - 2 days N = 1,432	Demographic Data Card	Data collection through review of hospital records and/or mother interview. Data collected includes infant sex, hospital plan, marital status, etc.
	Infant Care Plans Checklist	Administered to mothers; data collected includes plans for care of infant and when outside care may be needed.
Maternity Ward Infant age: 2 - 3 days N = 285	Post-Partum Interview	Semi-structured interview with mother, tape recorded and usually requiring one hour; data collected includes parent education and income, mother's plans to return to work or school, family composition, childrearing attitudes, etc. Interview data is scored with respect to "Global Maternal Variables" patterned after H. Moss scoring convention.

TABLE 17 (Continued)

Scheduled Times and Sample Size	Activity or Scale	Data Gathering and Treatment
Phase II (January 1, 1974 to May 15, 1974)		
Mailed Study Information Infant age: 8 weeks N = 285	Letters to study participants	Letter included study information and requested that study participants update telephone and address information if necessary.
	Telephone interview	Update infant care plans information and made appointments for home visits; got directions to home and checked to see if babysitter was needed for older siblings for period of home visit; described home visit procedures to mother.
Phase III (February 1, 1974 to June 15, 1974)	Mother-Infant interaction - naturalistic observation, including:	
Home visit Infant age: 3 months N = 219	a) recorded narrative account of behavioral observations during caretaking (Dressing, diapering, feeding solids)	Data in form of transcribed narrative; all observational data scored by guidelines provided by M. Ainsworth's "Maternal Care Behaviors" (Ainsworth and Wittig, 1969)
	b) time sampling of discreet behaviors on checklist at 10 second intervals during a liguid feeding (bottle or breast).	Mother and infant behavior coded on checklist protocal; frequency counts made of behaviors exhibited per unit time of liguid feeding

TABLE 17 (Continued)

Scheduled Times and Sample Size	Activity or Scale	Data Gathering and Treatment
	Maternal Role Interview	Semi-structured interview with mother about infant care concerns and attitudes and maternal role Responses were recorded and later scored with respect to "Global Maternal Variables" patterned after H. Moss scoring convention. (ratings on a scale of 1 to 9)
	Home environment Description and Conditions of Home Visit	Notations intended to provide record of general home atmosphere and receptivity of participants to the study procedures.
	Bayley Scales of Infant Development	Administered to infants; mental development index and psychomotor development index scores are derived.
Phase IV (June 1974 to October 1974) Infant Age: 8 months N = 187	Mother-infant interaction-naturalistic observation, including:	
	a) recorded narrative account of quality of mothering during caretaking and relaxed "play" situations	Narrative record of ongoing behavior of mother and infant in caretaking and relaxed "play" situations scored by guidelines provided by M. Ainsworth's "Maternal Care Behaviors" (Ainsworth and Wittig, 1969).

TABLE 17 (Continued)

Scheduled Times and Sample Size	Activity or Scale	Data Gathering and Treatment
	b) time sampling of discreet behaviors on checklist at 10 - second intervals during a solid feeding.	Mother - infant behavior coded on checklist protocal; frequency counts made of behavior exhibited per unit time of solid feeding
	Bayley Scales of Infant Development	Administered to infants; mental development index and psychomotor development index scores are derived
	Infant Care Inventory	Checklist of caretaking skills administered to mother.
	Maternal Attitude Scale (MAS)	Administered to mothers; (Cohler, 1975)
	Home Cosposition	Interview with mothers to ascertain home composition and ages for all persons living in the home.
	Maternal Employment Inventory	Administered to mothers; employment status and importance of roles were ascertained.
	Maternal Role Interview	Semi-structured interview with mother about infant behaviors, father involvement, and

TABLE 17 (Continued)

Scheduled Time and Sample Size	Activity or Scale	Data Gathered and Treatment
		maternal care attitudes. Interview data is scored with respect to "Global Maternal Variables" patterned after H. Moss scoring Convention (ratings on a scale of 1 to 9).
	Stranger Approach	Administered to infants; observed behavior of a stranger approach progression.
	Brief Separation and Reunion	Mother and infant behavior coded in response to brief separation and reunion.
Phase V (November 1974 to April 1975)		
Mailed Study Information Infant age: 12 months N = 180	Letters to study participants	Letter included scheduling and parking information, etc.
	Calendar Form	Administered to working mothers; data gathered includes months worked, type of child care utilized and location of child care, etc.

TABLE 17 (Continued)

Scheduled Time and Sample Size	Activity or Scale	Data Gathered and Treatment
	Reasons for Working Instrument	Administered to all mothers; ranked work values scale. (Eyde, 1962)
Center Visit Infant age: 12 months N = 180	Strange Situation Behavior Instrument (SSBI); Infant Attachment Patterns and Exploration Behavior	Structured laboratory situation designed to observe mother-infant interaction and infant attachment to mother. (Ainsworth and Wittig 1969)
	Bayley Scales of Infant Development	Administered to infants; mental development index and psychomotor development index scores are derived.

TABLE 18

SUMMARY LIST: PHASE I VARIABLES ASSESSED - INFANT AGE 2-3 DAYS

Demographic

- Hospital of birth
- Sex of infant
- Birth order of infant
- Hospital plan (private/clinic; rooming-in)
- Marital status
- Birthdate (month, day)
- Birthweight
- Race
- Rearing plans (Sitter, day care, relative, group)
- Father occupation
- Father education
- S.E.S. total
- Mother occupation
- Mother education
- Social Class
- Mother age
- Father age
- Marital status
- Number of months married
- Previous marriage - mother
- Previous marriage - father
- Number of siblings of study infant
- Number of people living in household

Other

- Mother took courses during pregnancy
- Father attended courses with mother
- Number of children wanted
- Pregnancy planned
- Father living with mother and infant
- If not, father interacting with infant
- Rearing plans
    - Stay home
    - Go to school (and age of infant when mother goes to school)
    - Go to work (and age of infant when mother goes to work)
- Number of months pregnant when mother quit work
- Leave of absence

Interview-Based (Moss/Hock) Variables

- Hospital Stay a Satisfying Experience
- Paternal Involvement
- Maternal Anticipation
- Paternal Interest
- Experience Caring for Infants
- Dependency
- Positive Perception of Infant While in Hospital
- Feeding Plans

TABLE 18 (Continued)

Attitude to Non-maternal Care
Degree of Preference for Active Child
Mother as a Source of Stimulation (Orientation)
Apprehension over Health and Well-Being of Infant
Degree of Interest in Affectionate Contact with Infant
Nurturance
Autonomy vs. Control
Confidence in Maternal Skills
Maternal Investment
Positive Attitude to Maternal Role
Career Orientation
Career History
External Control
Mother as a Source of Stimulation (Voice)

TABLE 18 (Continued)

SUMMARY LIST: PHASE III VARIABLES ASSESSED - INFANT AGE 3 MONTHS

Interview Based (Moss/Hock) Variables

Degree of Depression following Pregnancy
Apprehension over Health and Well-Being of Infant
Proneness to Disorganization under Stress
Autonomy vs. Control
Degree of Preference for Early Infancy
Degree of Preference for Active Child
Perception of Infant as Active
Attitude to Non-maternal Care
Nurturance
Degree of Aversion to Fussy Infant
Perception of Infant as Fussy
Degree Infant is Regarded as Demanding
Degree of Interest in Affectionate Contact with Infant
Degree Infant is Quieted by or Enjoys Physical Contact
Degree Infant is Quieted by or Enjoys Social Contact
Degree of Maternal Interest in Social Interaction with Infant
Degree Infant is Quieted by or Enjoys Visual Stimulation
Career Orientation
Confidence in Maternal Skills
External Control
Degree Infant is Seen in a Positive Sense
Degree Mother Feels Infant is Positively Attached to Her
Positive Attitude to Maternal Role
Investment in Maternal Role
Effects of Infant Characteristics on Maternal Role
Mother Interpretation of Infant Discontent
Dependency
Separation Stress
Perception of Infant Distress at Separation
Satisfaction with Father Involvement

Maternal Care (Ainsworth) Variables

Mother's Delight in Baby
Mother's Acceptance of Baby
Mother's Attitude toward Baby as Evidenced by Her Excellence as an Informant
Synchronization of Mother's Intervention to Baby's Rhythms
Determination of Amount of Food and End of Feeding
Mother's Regard for Baby's Preference in Kind of Food
Synchronization of Rate of Feeding to Baby's Pace
Appropriateness of Mother's Initiations of Interactions
Amount of Physical Contact
Quality of Physical Contact in Holding Baby
Effectiveness of Mother's Response to Baby's Cry

TABLE 18 (Continued)

Amount of Visual Contact
Amount of Auditory and Vocal Contact
Frequency of Play Interaction
Appropriateness of Play Interaction

Nancy Bayley Scales

Mental Developmental Index
Psychomotor Developmental Index

Feeding Behaviors

Not Attached	Infant Behaviors
Attached: No suck	
Sporadic	
Vocalization	
Smile	
Gag, Spit up	
Hiccough	
B.M.	
Startle	
Arm and Leg Thrusts	
Vocalize to Infant	Mother Behaviors
Smile to Infant	
Look at Infant	
Touch Infant's Mouth	
Touch Infant's Cheek/Chin	
Pat Infant	
Caress Infant	
Move Infant	
Rock Infant	
Alert	Infant State
Drowse	
Sleep	
Fuss	
Cry	
Infant Not in Contact	Infant Position
Facilitate vis à vis	
Bottle Propped	
Supine	
Up	
Milk	Feeding Inputs
Water	
Other	

Role-Related Interview Items

Role Satisfaction
Reason for Staying Home
Husband's (or Family's) Attitude to Mother Working
Husband's (or Family's) Influence on Mother

TABLE 18 (Continued)

SUMMARY LIST: PHASE IV VARIABLES ASSESSED - INFANT AGE 8 MONTHS

Interview Based (Moss/Hock) Variables

Proneness to Disorganization under Stress
Attitude to Non-maternal Care
Nurturance
Degree Infant Enjoys Physical Contact
Degree Infant Enjoys Social Interaction
Degree of Maternal Interest in Social Interaction with Infant
Degree Infant Enjoys Visual Stimulation
Career Orientation
Degree Infant is Seen in a Positive Sense
Degree Mother Feels Infant is Positively Attached to Her
Positive Attitude to Maternal Role
Investment in Maternal Role
Effects of Infant Characteristics on Maternal Role
Separation Stress
Perception of Infant Distress at Separation
Satisfaction with Father Involvement
Degree Infant Discriminates Between Caregivers
Degree of Infant Attachment to Objects
Mother Knowledge of Non-maternal Care

Maternal Care (Ainsworth) Variables

Mother's Delight in Baby
Synchronization of Rate of Feeding to Baby's Pace
Appropriateness of Mother's Initiations of Interactions
Amount of Physical Contact
Quality of Physical Contact in Holding Baby
Amount of Visual Contact
Amount of Auditory and Vocal Contact
Frequency of Play Interaction
Appropriateness of Play Interaction
Cooperation vs. Interference
Accessibility vs. Ignoring and Neglecting
Acceptance vs. Rejection
Sensitivity to Signals

Nancy Bayley Scales

Mental Developmental Index
Psychomotor Developmental Index

Feeding Behaviors

Spoon Touches Infant's Mouth
Happy-content Vocalization
Smile
Watch Mother's Face
Negative Vocalization

TABLE 18 (Continued)

Purposeful Spit-out	Infant Behaviors
Spit Out	
Cough/choke	
Hiccough	
Spit Up	
Burp	
Arm Thrusts	
Leg Thrusts	
Rocking	
Positive Vocalization	Mother Behaviors
Vocalization	
Negative Vocalization	
Change Baby's Position	
Wipe Baby's Face	
Alert	Infant State
Drowse	
Fuss	
Infant Held by Mother	Infant Position
Facilitate vis à vis	

Maternal Attitude Scale

Appropriate vs. Inappropriate Control of Child's Aggression
Encouragement vs. Discouragement of Reciprocity
Appropriate vs. Inappropriate Closeness with Child
Acceptance vs. Denial of Emotional Complexity in Child Care
Feeling of Competence vs. Lack of Competence in Perceiving and Meeting Baby's Needs

Stranger

Stranger Approach Progression
Brief Separation and Reunion

Maternal Confidence

Infant Care Inventory

Work-Related Interview Items

Work Status
- Hours per week child spends in care of others
- Time working (part-time, full-time)
- Age of infant when mother first went to work
- Type of care used (sitter, day care, relative, group care)
- Location of care (in home, out of home)
- Number of times mother changed child care arrangements
- Mother's occupation (updated)
- Number of transitions from home to work
- Cumulative number of months worked in the 1st 12 months of life

TABLE 18 (Continued)

SUMMARY LIST: PHASE V VARIABLES ASSESSED - INFANT AGE 12 MONTHS

Nancy Bayley Scales

- Mental Developmental Index
- Psychomotor Developmental Index

Strange Situation Behavior Instrument

- Contact Maintaining
- Proximity Seeking
- Contact Avoiding
- Proximity Avoiding
- Search Behavior
- Cry Behavior
- Withdrawal

Reasons for Working

- Mastery-Achievement Value
- Independence Value
- Dominance-Recognition Value
- Interesting Activity-Variety Value
- Economic Value
- Social Value

Work Status

- Calendar Form (the following were assessed on a month-by-month basis throughout the first 12 months of the study infant's life)
  - Employment Status (part-time, full-time)
  - Occupation (updated)
  - Type of care used (sitter, relative, day care, group care)
  - Location of care (in home, out of home)

- Work Status by Phase
- Onset of Work
- Total Number of Months Worked in Infant's First Year of Life
- Number of Changes in Work Status in Infant's First Year of Life
- Number of Categorical Transitions
- Number of Transitions within a Category
- Total Number of Transitions
- Type of Non-maternal Care Used a Majority of the Time
- Location of Non-maternal Care Used a Majority of the Time

Results

Overview of This Chapter

Results of data analyses and findings of this study are organized topically, according to the five major questions guiding this investigation. Those questions are:

1) What is the relation between selected demographic characteristics and maternal and infant characteristics observed during the course of the infant's first year of life?
2) How do selected measures of maternal attributes relate when measured concurrently and when measured at successive periods?
3) How do selected measures of infant attributes (developmental level and social behaviors) relate when measured concurrently and when measured at successive periods?
4) What is the nature and extent of the relationship between maternal characteristics and infant developmental level and social behavior?
5) What is the relation between infant social behaviors exhibited in the Strange Situation Behavior Instrument and maternal work status, and type, location, and time of onset of non-maternal care?

Findings presented here result from preliminary analyses of the full breadth of data provided by the study, and aim to respond to the objectives of the original proposal guiding this effort. Further analysis of the study's data is ongoing; forthcoming findings will be presented in appropriate professional journals.

In this results section, treatment of each question will contain reference to techniques of data analysis employed, and findings from a number of modes of data collection. Because of the number of tables of data and figures for this report which if included here would interrupt the flow of readers' attention, all tables referred to in this Results section are contained in Appendix D; all figures are in Appendix E.

What is the relation between selected demographic characteristics and maternal and infant characteristics observed during the course of the infant's first year of life?

Correlational analyses (Pearson r and statistically related computations appropriate for the form of the data) were undertaken employing a number of measures of demographic characteristics of mothers and infants at the time of infant birth. Those demographic characteristics included: sex of infant, birth order of infant, marital status of mother, race of mother, rearing plans of mother, socioeconomic status of mother, mother's age at infant birth, number of months mother was married prior to infant birth, and number of siblings of infant.

As well, work status of mother served as a demographic characteristic of mothers in the sample; that status was measured both at the time of infant birth and several times over the course of the infant's first year of life. Measures of work status were derived from maternal interviews at 3, 8, and 12 months infant age, and corroborated through use of calendar forms which mothers in the study completed. Measures of work status included both mothers' self-reports of their work status (that is, whether mothers were working outside the home either on a part- or full-time basis) at the various points of data collection, and cumulative months of working those mothers experienced. The basis for collecting other demographic measures, and data describing the sample on those measures, is contained in the Procedures section of this report.

The measures to which these demographic characteristics were related are reported under topics below, while procedures of collecting those measures are also contained in the Procedures section of this report.

Relations between demographic and maternal characteristics. A number of demographic characteristics of mothers were related to factors depicting maternal characteristics derived from factor analyses of interview- and observation-based data collected at various points in time. (See Procedures section of this report for a complete description of the factors derived and variables contained in those factors for various phases of data collection for this study.)

A cluster of demographic variables reflective of life status and perhaps of culture was related to various characteristics of mothering and maternal behavior observed during the infant's first year of life. In general, older, white, married mothers (married for longer periods of time) belonging to a higher socioeconomic status exhibited greater parental involvement perinatally, more positive mother-infant interaction at 3 months of age, and a more sensitive, adaptable, and nurturant quality of mothering and offering of and enjoyment by the infant of visual stimulation at 8 months of age (see Table 19 for specific values). Black mothers were rated at the birth of their infants as more confident in child care skills and more accepting of the infant and the maternal role at 8 months. Older mothers were rated as more independent at the birth of their infants and at 3 months. They expressed less interest in the maternal role at the birth of their infant and at both 3 and 8 months believed themselves irreplaceableto the infant's care more so than did younger mothers.

As well, it appeared that mothers of later-born infants were more accepting of and comfortable in their maternal role. At the birth of the infant, mothers of later-born infants (as opposed to first born infants) reported greater confidence in child care skills; at 3 months these mothers reported a greater acceptance of the infant and the maternal role and a greater capacity to perceive their role independent of the infant and his characteristics. These relationships were not upheld when the specific number of siblings were considered. At the birth of their infants, mothers with more children reported greater interest and involvement perinatally and a greater interest in the maternal role; at 3 months they were rated as reporting and exhibiting more positive mother-infant interaction; at 8 months these mothers reported more pleasurable physical contact with their infants. However, while these findings have been treated separately, it may well be that older mothers also have a higher probability of having other children in their family; these various findings may be indicative of a pattern representing family type, though composed of discrete measures of maternal demographic characteristics.

Work status of mothers, as a demographic characteristic, was related to a variety of other measures of maternal characteristics taken during the first year of the infant's life. Two work status indices, work status at the time of data collection (3, 8, or 12 months infant age) and cumulative number of months worked during the infants' first year of life, were correlated with factor scores representing maternal behaviors (see Table 20).

Independence of Internal Control, a Phase I factor score (factor 5), was significantly related to work status at all later phases of data collection as well as to the cumulative months worked during the infant's first year. Mothers who worked tended to be more independent and to express internal control. There were no other significant correlations between work status, cumulative number of months worked, and factors derived during Phase I.

From the factor analyses based on the home visit and interview when the infant was approximately 3 months of age (e.g., Phase III), factor 3 -- Mother's Belief in her own Irreplacability -- was significantly related to the mother's current work status and was predictive as well of work status at subsequent data collection phases and the cumulative months worked during the first year of life; thus, mothers who believed themselves to be highly irreplaceable also tended not to work, either at the time of the assessment, or throughout the infant's first year of life. Dependency or External Control, was also significantly related to the mother's current work status and was predictive as well of work status when the infant was eight months of age, twelve months of age, and the cumulative months worked during the first year of the infant's life; mothers who were highly dependent and externally controlled, tended not to work at all throughout the infant's first year of life. Finally, the Mother's Perception of her Role Uninfluenced by her Infant, was significantly related to current work status and was predictive of work status at all subsequent phases of data collection as well as to the cumulative months worked during the first year of the infant's life. Mothers who saw their roles as uninfluenced by their infant's characteristics tended not to work throughout the infant's first year of life. There were no other signficant correlations between work status, cumulative number of months worked and Phase III factor analysis.

Four of the seven factors from the factor analysis based on the 8 month home visit were significantly related to the current work status of the mothers at the time of the visit. Maternal Separation Anxiety was significantly related to current work status as well as predictive to work status when the infant was twelve months of age and to the cumulative number of months worked during the first year of the infant's life. Mothers who were not working tended to show greater anxiety about separation from their infants. Maternal Role Investment was also significantly related to current work status and was predictive of subsequent work status and the cumulative months worked during the first year of the infant's life; mothers whth a high degree of investment in their maternal roles, tended not to work during the infant's first 12 months of life. Stoicism, factor 4, the ability to remain calm under stress, was indicative of a non-work status at the time of data collection and predictive of a non-work status at 12 months and a lower cumulative number of months worked during the first year of the infant's life. Pleasurable Physical Contact was significantly related to current work status as well as predictive of later work status and to the cumulative number of months worked during the first year; nonworking mothers tended to take greater pleasure in physical contact with their infants. Finally, Visual Stimulation, was significantly related to current work status and was predictive of subsequent work status and to the cumulative number of months worked during the first year. Nonworking mothers tended to have infants with a high degree of visual curiosity. No other significant correlations were found between work status, cumulative number of months worked and Phase III factor analysis.

In summary, maternal behavior characteristics represented in factors derived from interview- and observation-based data collection were related to work status. Particularly, characteristics described as representing independence and internal control were associated with working mothers. Characteristics suggesting a belief in maternal irreplaceability maternal perception of role uninfluenced by specific infant characteristics, greater separation anxiety, greater pleasurable physical contact with infant, greater visual stimulation of infant, and exhibiting of less disorganization under stress, were associated with nonworking mothers.

With respect to maternal attitudes as measured by the Maternal Attitude Scale (MAS), a cluster of demographic variables reflective of life status or perhaps of culture again appeared related to various maternal attitudes expressed during the infant's first year of life. When the infant was 3 or 8 months of age the mother was given the MAS, a written instrument in which she was asked to rate on a 6-point scale, her degree of agreement on 233 statements pertaining to infant and child care and development (see Procedures chapter, Table 8). A factor analysis was performed on these responses and five central categories of maternal attitudes were derived:

> Factor I, Control of Aggressions, deals with the appropriate versus inappropriate control of the infant's aggression, reflecting a mother's belief that the child's aggressive impulses should be directed into socially acceptable outlets rather than inhibited.
>
> Factor II, Reciprocity, deals with the encouragement versus discouragement of reciprocity, reflecting a mother's belief that infants can communicate with their mothers and that this communication should be encouraged by mothers.
>
> Factor III, Appropriate Closeness, deals with appropriate versus inappropriate closeness with the child. Low scores on this factor indicate a maladaptive attitude involving the mother's difficulty in separating herself from her child together with the feeling that infants and young children make demands which lead to unhappiness and frustration, leaving mothers feeling depleted and exhausted.
>
> Factor IV, Emotional Complexity, deals with the acceptance versus the denial of emotional complexity in child care.

Factor V, Competence, deals with the feelings of competence expressed by the mother in meeting the infant's needs. Table 21 contains the results of the correlations of these five maternal attitude factors and the selected demographic variables for 172 subjects. One major pattern emerged. White, married, older mothers belonging to a higher socioeconomic status rated similarly on three of the five factors. These mothers, as opposed to younger, unmarried, black mothers of a lower socioeconomic status, felt that the child's aggressive impulses should be modulated by providing alternate channels rather than inhibited and reflected adaptive attitudes (Control of Aggressions), felt more than their infants could communicate and that this communication should not be discouraged (Reciprocity), and accepted more the feelings of ambivalence and inadequacy and uncertainty associated with child care (rather than a denial of all concerns and doubts) (Emotional Complexity). All these correlations were significant ($p < .05$ or .01). Three of the demographic variables, older, white mothers of a higher socioeconomic status, also related to the expression of lesser feelings of competence in meeting the needs of the infant.

Relations between demographic and infant characteristics. A number of demographic characteristics of mothers at birth were related to characteristics of infants observed during the first year of infant life. As well, these demographic characteristics were related to characteristics of maternal behavior directed toward her infant, and to measures of the development of social relations between mother and infant as represented in observations during the Strange Situation Behavior Instrument. All these relations will be reported here, although certain of them might more logically relate to maternal characteristics: all relations are centered on the infant in this section of the report.

This data is reported for 152 subjects. In general there were few significant findings for the data collected at 3 months infant age. Mothers of first-born infants (as opposed to later-born) looked at their infants more during the observation of the 3 month feeding. Mothers with higher educational status and mothers who had planned the pregnancy of this infant caressed the infant more during the feeding situation.

Three interesting trends emerged from the time-sampling data of the feeding behaviors at 8 months and demographic information. First-born infants of married mothers of a higher socioeconomic and educational status tended to make more happy vocalizations but not negative vocalizations; these mothers also tended to vocalize positively more but not vocalize more in a neutral tone or make more negative vocalizations. Infants of older mothers who had been married for longer periods of time made more negative vocalizations; these mothers also expressed more neutral vocalizations.

Mothers who tended to hold their infants during the feeding at 8 months were not married, black, of low socioeconomic and educational status, younger, had had an unplanned pregnancy, and at the birth of their infants planned not to home-rear them.

The infants' responses to a strange environment, an unfamiliar adult, and separation and reunion with his mother were studied when the infant was 1 year old. The codings of the behaviors the infant exhibited toward his mother and a stranger in the eight episodes of this standardized instrument were subjected to correlational analyses with the selected demographic variables for 172 subjects.

In general, the significant results were scattered; there were no trends or any indications that any of these variables consistently significantly related to the behaviors the infant manifested in the Strange Situation at one year of age.

Work status of mothers was related to various characteristics of infants observed during the course of study of the infant's first year of life. In these analyses, the first point to be noted is that no significant relation existed between infant development as measured by mental and psychomotor scales on the Bayley at 3, 8, and 12 months infant age and work status of mothers at those infant ages. These data are presented in Table 22 for 164 subjects. As well, there were no trends among the few correlations of statistical significance between maternal work status and maternal behavior toward infants during feeding as measured during time-sampled feeding observations.

How do selected measures of maternal attributes relate when measured concurrently and when measured at successive periods?

Data for this study were collected using several techniques: time-sampling of discrete, pre-defined behaviors; ratings based on observations and interviews; and standardized, self-administered scales. This multi-method approach permitted maternal behaviors and attitudes to be measured from several perspectives and as well allowed analyses of data from concurrent measures to provide insight into the validity of some of the measurement techniques. The following discussion considers both the relationships between variables concurrently measured and the relationships between variables measured successively over the period of study. Throughout the first 8 months of infant life, ratings of mothers' attitudes and caregiving abilities were made. Specifically, maternal attitudes were measured by use of: 1) interview questions asked at the birth of the infant and at 3 and 8 months infant age; 2) global ratings of the general attitude of the mother towards the infant, evaluated at 3 and 8 months infant age; and 3) the Maternal Attitude Scale (MAS), a written instrument in which the mother was asked to rate, on a six-point scale, her degree of agreement on 233 statements pertaining to infant and child care and development. (The MAS was administered at 8 months infant age.) Maternal caregiving abilities were measured at 3 and 8 months infant age by use of: 1) time samplings of specific behaviors observed in the feeding situation; and 2) global ratings of the mother's appropriateness of feeding behaviors, interaction initiations and responses, and social contact. In addition, factors were derived from the interview- and observation-based variables at each infant age which reflect both maternal attitudes and maternal caregiving abilities. The following results are based on Pearson r correlational analyses involving 164 subjects; the analyses involving the time sampling of feeding behaviors, however, are based on only 152 subjects.

Relations among concurrent measures. The time sampled behaviors observed in the feeding situations at 3 and 8 months served as an objective concurrent validity check on rating scales used during those time periods. Tables 25 and 26 list the significant results of the correlational analyses of time sampled behaviors at 3 and 8 months and the global ratings of maternal attitudes and caregiving abilities measured at these times. As can be seen, several relations indicative of concurrent validity emerge. Measures of feeding behaviors and observation-based maternal care variables measured at the same infant age appear more highly related at 3 months than at 8 months infant age, although at both ages maternal affectional behaviors (vocalize, look at, caress, smile, etc.) are positively related to the variables indicating sensitive, nurturant mothering, delight in the infant and in interaction, and the providing of greater amounts and more appropriate types of tactile, visual, auditory, and vocal contact. At 3 months infant age, affectionate behaviors of the mother are more closely related to her delight in her infant, her excellence as an informant, her synchronization of rate of feeding to the infant's pace, her initiations of interactions, her providing a greater amount of visual and auditory and vocal contact, and her providing appropriate play interaction. At the 8 month feeding, a greater frequency of the mother's positive vocalizations was significantly ($p < .01$) related to a higher rating on the following maternal care variables: Mother's Delight in Infant, Initiations of Interactions, Amount of Physical Contact, Quality of Physical Contact, Amount of Auditory and Vocal Contact, Frequency of Play Interaction, Appropriateness of Play Interaction, Accessibility vs. Ignoring and Neglecting, Acceptance vs. Rejection, and Sensitivity to Signals.

The time sampled feeding behaviors at 8 months also offer corroboration of the validity of maternal attitudes measured by the MAS at that time (see Table 27). Mothers who expressed the attitude that infant aggressive impulses should be inhibited, vocalized negatively more; mothers, on the other hand, who expressed the attitude that aggressive impulses should be rechanneled vocalized positively more. Mothers who expressed more positive vocalizations during feeding also expressed the attitude that infants can communicate and that a mother can enjoy her infant without being overly stifled or stifling. An interesting relationship held between the time sampled variable "Infant Held by Mother" and the attitudes expressed on the MAS. The holding of infants by mothers, seemingly indicative of an affectionate relationship, was more often manifested by mothers who expressed attitudes indicating that infant aggressive impulses should be inhibited, that infants cannot communicate and are incapable of developing a reciprocal social relationship with their mothers, and have no concerns or doubts about child care and require little child care assistance from others (maladaptive attitudes on Control of Aggressions, Reciprocity, and Emotional Complexity). This seeming incongruity is clarified when one recalls that this is the feeding situation observed at 8 months of age. At this time all of the infants are capable of sitting with little or no support and were being spoon rather than bottle fed. The mothers who would hold their infants at this age, therefore, were either not adapting to the infant's changing developmental needs or were unable to provide an appropriate infant seat or high chair in which to place their child. An examination of the demographic variables (previously discussed) relating to this variable (infants were more often held by unmarried, young, black mothers of a lower socioeconomic and educational status) would appear to support this latter interpretation. As noted previously in this Results section, young, unmarried, black mothers of a lower socioeconomic status were more likely to score maladaptively on the factors of Control of Aggressions, Reciprocity, and Emotional Complexity.

Longitudinal relations. By use of correlations of the same interview-based and observation-based variables measured at the different time periods, intercorrelations of the factors derived from these measures at the birth of the infant and at 3 and 8 months infant age, and correlations of the time sampled feeding behaviors observed at 3 and 8 months with these observation-based variables and derived factors it was possible to identify maternal characteristics which remained stable throughout the first 8 months of the infants' lives (see Tables 26, 28, 29, 30, 31,.32). Three major findings emerged: 1) mothers who at the birth of their infant expressed a high degree of anticipation prior to the birth of their infants and who also expressed a child centered orientation later expressed attitudes and exhibited caregiving activities indicative of a sensitive, nurturant, adaptive, stimulating quality of mothering throughout the first 8 months of the infant's life; 2) mothers who expressed a high degree of independence at the birth of their infant, also expressed a high degree of independence at 3 months infant age; at both ages this independence was indicative of less pleasurable physical contact at 8 months infant age; and 3) mothers who at the birth of their infant expressed a high interest in the maternal role and who expressed little career orientation, later expressed a belief in their irreplaceability to the infant's welfare and personal dread of leaving the infant in the care of others.

The stability of a nurturant, sensitive, adaptive, child-centered quality of mothering is indicated by interview and observation-based variables and the factors derived from these variables. From the interview-based variables, the nurturance of the mother was positively and significantly related ($p < .01$) from the birth of the infant through infant age 8 months; the Degree of Maternal Interest in Social Interaction with the Infant and the Degree the Infant is Seen in a Positive Sense were positively and significantly ($p < .01$) related from 3 to 8 months infant age (see Table 28). All of the observation-based variables measured at both 3 and 8 months infant age, indicative of the mother's acceptance of the infant and appropriate interaction with him, were also positively and significantly correlated (see Table 29). The derived factor scores measured during the first 8 months of the infant's life which when subjected to analysis correlated to depict this type of sensitive, nurturant, child-centered quality of mothering were as follows: Parental Involvement Perinatally, Infant Centered in Interaction, Child-Centered Orientation to the Environment (measured at the birth of the infant), Positive Mother-Infant Interaction (measured at 3 months infant age) and Quality of Mothering (measured at 8 months infant age). (See Table 30).

The results of the analyses involving the time sampled feeding behaviors at 3 and 8 months also substantiate the idea that quality of mothering is a stable maternal characteristic in that a nurturant, sensitive, adaptive, child-centered quality of mothering was consistently measured as such through the infant's first 8 months of life. It can be observed from the intercorrelations of the time sampled behaviors listed in Table 31 that a greater amount of maternal vocalizations at 3 months was predictive of a greater amount of maternal vocalizations at 8 months. Maternal affiliative behaviors (caress, looks, vocalize, pats) observed at 3 months were predictive of higher ratings on the following observation-based variables measured at 8 months infant age: Quality of Physical Contact, Amount of Visual Contact, Appropriateness of Play Interaction, Cooperation vs. Interference, and Acceptance vs. Rejection (see Table 26 for specific values). Finally, various maternal behaviors observed in the feeding situations were significantly correlated with the derived factors indicative of sensitive, nurturant, adaptive quality of mothering (see Table 32). A greater amount of maternal vocalization in the 3 month feeding was predicted by an expression at the birth of the infant, of high interest in the maternal role; it was also related to a more positive-mother-infant interaction measured concurrently and a more nurturant, sensitive, adaptive quality of mothering measured at 8 months infant age. A greater frequency of maternal smiles during the 3 month feeding observation was not predicted by any of the factors derived from the interview at the birth of the infant. It was related to concurrent measurements of greater sensitivity and cooperation in feeding and the mother's perception of her role as uninfluenced by specific infant characteristics. More smiling at 3 months was also predictive of a more nurturant, sensitive, adaptive quality of mothering at 8 months. The mother's greater frequency of positive vocalications during the 8 month feeding was predicted by a report, at birth, of greater parental involvement perinatally and, at 3 months, by more positive mother-infant interaction and a greater maternal belief in her own irreplaceability. Concurrently, more maternal positive vocalizations related to a more sensitive, nurturant, adaptive quality of mothering, more pleasurable physical contact, and the greater provision and infant enjoyment of visual stimulation. Maternal negative vocalizations were related to only one factor; mothers who expressed at the birth of their infants more confidence in child care skills (perhaps overlooking certain complexities) vocalized negatively to their infants at 8 months of age.

Study of the intercorrelations of factor scores leads to a second observation: the mother's expression at the birth of her infant of independence and internal control was significantly and positively related ($p < .01$) to her expression of independence at 3 months infant age. (See Table 30

Mothers who at the birth of their infant expressed a high interest in the maternal role and who also expressed little career orientation, later expressed beliefs in their irreplaceability to the infant's welfare and personal dread of leaving the infant in the care of others. From studying the correlations in Table 28, those relating to the interview-based variables, it can be seen that the mother's expressed investment in and positive attitude toward the maternal role and her degree of career orientation were stable throughout the infant's first 8 months of life ($p < .01$). In addition the following variables were positively and significantly related from infant ages 3 to 8 months: Degree Mother Feels Infant is Positively Attached to Her, Separation Stress, and Perception of Infant Distress at Separation. These variables loaded heavily on the derived factors which also showed intercorrelations through the first 8 months of the infant's life (see Tables 10, 11, 12). A high interest in the maternal role at the birth of the infant was predictive of a higher rating on Mother's Belief in Her Own Irreplaceability at 3 months infant age and Investment in Maternal Role at 8 months infant age; it was also predictive of a low rating on Separation Anxiety (meaning greater separation anxiety) at 8 months infant age. Mother's Belief in

Her Own Irreplaceability measured at 3 months infant age was indicative of similar feelings at 8 months infant age and also greater separation anxiety (see Table 30).

Relationships between rating scales and self-administered scales of maternal attitudes (MAS). A correlational analysis was performed using the five factors derived from the 233 questions of the self-administered Maternal Attitude Scale (MAS) and the 22 factors derived from the interview- and observation-based ratings made at birth, 3, and 8 months infant age (see Table 33). In general, the five following trends emerged: 1) mothers who felt that it was important to modulate the expression of aggression by providing alternate channels rather than to be overly restrictive (MAS I) were more likely to be rated as mothers which a) demonstrated a nurturant, sensitive, stimulating, adaptive quality of mothering through the infant's first 8 months of life; and b) did not feel that the maternal role was their sole fulfillment in life, but felt that others could also meet the needs of their infants. 2) Mothers who felt that babies can communicate with their mothers and this relationship should be encouraged (MAS II) were more likely to be mothers which a) were rated as demonstrating a nurturant, sensitive, stimulating, adaptive quality of mothering through the infant's first 8 months of life and b) having a high interest in the maternal role and placing a high value on child-centered interaction when their infants were born. 3) Mothers who felt they could enjoy and care for their babies without undue self-sacrifice, protectiveness, and/or yielding to the baby's demand for an exclusive relationship (MAS III) were mothers which were more involved perinatally and which expressed a higher degree of child centered orientation at the birth of their infants and demonstrated a sensitive, nurturant, adaptive quality of mothering at 8 months of infant age. 4) Mothers who were able to acknowledge their feelings of doubt, ambivalence, and inadequacy about child care (MAS IV) were more likely to be mothers which a) expressed low confidence in child care skills and perceived their role as influenced by infant characteristics; and b) had a lower acceptance of the maternal role and rated higher in independence when their infants were 3 months old; and c) demonstrated a higher involvement perinatally and a more sensitive, nurturant, adaptive quality of mothering at 8 months of infant age. 5) Mothers who felt that they could understand and adequately meet the infant's needs (MAS V) were more likely to be mothers who were dependent, preferred an active infant, and placed a high investment in the maternal role. Thus it can be seen that a nurturant, sensitive quality of mothering was related to all of the mother attitude factors except the latter, the expression of feelings of competence. Mothers who expressed a high investment in the maternal role were more likely to express feelings of competence and feelings that an infant can communicate with his mother and this relationship should be encouraged; they were less likely to express the importance of modulating and channeling rather than inhibiting aggressive impulses and to acknowledge their feelings of doubt, inadequacy, and ambivalence regarding child care.

The following discussion presents a detailed description of the variables and relationships summarized above. Significant relationships between each MAS score and each factor score are presented; relationships with the Phase I (maternity ward visit) factor scores are noted first, followed by the 3 and 8 month home visit factors.

From the factor analysis of the interview-based maternal attitudes and behaviors derived from the hospital interview, mothers rated as high on perinatal parental involvement tended to score in the adaptive direction on the MAS, indicating that a child's aggressive impulses should be directed into socially acceptable outlets on factor I of the MAS. Mothers who indicated that babies can communicate with their mothers and that this communication should be encouraged (factor II of the MAS) tended to be rated as high on perinatal parental involvement, high on interest in the maternal role, and high on possessing a child-centered orientation to the environment.

Regarding factor III of the MAS, mothers who indicated an adaptive attitude toward appropriate closeness with their child tended to be rated as high on perinatal parental involvement and as possessing a child-centered orientation to the environment. Mothers who, on factor IV of the MAS, indicated an acceptance of the emotional complexity in child care tended to be rated high on parental involvement perinatally but as low in confidence in child care skills. Finally, mothers who, on factor V of the MAS, indicated a feeling of competence in perceiving and meeting the infant's needs, tended to be rated as preferring an active life and active infant.

Based on the factor analysis of ratings from the home visit made when the infant was approximately 3 months old, mothers who, on factor I of the MAS, indicated that aggressive impulses of the child should be channeled into socially acceptable outlets were more likely to be rated as high on positive mother-infant interaction, low on the acceptance of the infant and maternal role, low on believing that she was irreplaceable, low on dependency or external control, and high on perceiving her child as cuddly.

Mothers who, on factor II of the MAS, indicated that infants can communicate with mothers and that this communication should be encouraged, were more likely to be rated as high on positive mother-infant interaction, and high on perceiving their infant as cuddly. Mothers who, on factor IV of the MAS, indicated an acceptance of the emotional complexity involved in child care, were also rated as low on the acceptance of the infant and maternal role, low on dependency or external control, and low on perceiving her role as uninfluenced by her infant. Finally, mothers who, on factor V of the MAS, indicated general feelings of competence in perceiving and meeting their infant's needs, tended to be rated as highly accepting of the infant and maternal role and as highly dependent and externally controlled.

Based on the factor analysis of ratings from the 8 month home visit, mothers who, on factor I of the MAS, indicated that aggressive impulses of the child should be channeled into socially acceptable outlets, were more likely to be rated as more sensitive, nurturant and adaptive in quality of mothering, having lesser maternal separation anxiety, having a weaker belief in their own irreplaceability, and describing their infants as being interested in visual stimulation.

Mothers who, on factor II of the MAS, indicated that infants can communicate with their mothers and that this communication should be encouraged, were more likely to be rated as high on quality of mothering and high on describing their infants as being interested in visual stimulation. Mothers who, on factor III of the MAS, indicated an appropriate sense of closeness and distance from their child, were also rated as high on quality of mothering.

Mothers who, on factor IV of the MAS, indicated an acceptance of the emotional complexity involved in child care (an adaptive attitude), were also rated as high on quality of mothering. Mothers who, on factor V of the MAS, indicated feelings of competence in perceiving and meeting their infant's needs, tended to be rated as having a high investment in the maternal role.

How do selected measures of infant attributes (developmental level and social behaviors) relate when measured concurrently and when measured at successive periods?

Infant mental and motor development was assessed at 3, 8, and 12 months of age using the Bayley Scales of Infant Development.

Observations of infant behavior exhibited in social situations provided the data for evaluating the infant's relationship with his mother and his skills in relating to strange adults. The observational data collected at 3 and 8 months infant age through a time-sampling technique was quantified by calculating the frequency of occurrence of behaviors per unit time; ratings were made of observed infant behavior at 8 months as a stranger approached and (later in the visit) when his mother left. At 12 months of age the infant's behaviors toward his mother and a stranger were quantified according to detailed scoring guides. These varied measures of social behavior permitted comparison of data collected utilizing different techniques. Measures administered concurrently are considered as they related to one another at that time; measures administered successively are considered as they relate from one time to another.

The following discussion will consider in order, the developmental test data, the time sampled observational data and finally the data collected by observing the infant behaviors in the structured situations: the Stranger Approach Progression, the Brief Separation, and the Strange Situation Behavior Instrument.

Developmental test data. Table 22 lists the coefficients of correlation between the Mental Development Index (MDI) and the Psychomotor Development Index (PDI) measured at 3, 8, and 12 months of infant age. At each time of measurement the two indices were highly positively related.

Considering the predictive value of these indices, in general the 3 month measurement was significantly related to the 8 month measurement, but not to the 12 month measurement. The 12 month scores were predicted chiefly by the 8 month measurement.

Time-sampled behavioral observations. The occurrence of selected discrete, pre-defined infant behaviors was noted as they were exhibited in the feeding situation at 3 and 8 months infant age. Table 31 presents the correlations between the behaviors counted at 3 and at 8 months infant age. When only the relationships between infant behaviors were considered only one coefficient was significant. Infants, at 3 months, who smiled more also vocalized more. These behaviors were not significantly related to similar infant behaviors at 8 months of age.

The scores from the two Bayley indices (MDI and PDI) were also analyzed with the observational data. In general there were few significant coefficients; no significant trends or consistent clusters of behaviors were noted (see Tables 34 and 35).

The time-sampled feeding behaviors were analyzed with the scores from the Stranger Approach Progression, the Brief Separation, and the Strange Situation Behavior Instrument. A rather interesting trend emerged in that a higher incidence of negative infant vocalizations and fussing during infant feeding was significantly related to increased wariness of the stranger, fretting in response to brief separation and crying in the strange situation. A discussion detailing the relationship follows.

The infant's degree of wariness at the approach of a stranger was measured at 8 months infant age. Table 36 presents the correlations between the infant's degree of wariness and negative infant vocalizations noted in the time sampling of feeding behaviors at 3 and 8 months. A greater frequency of negative infant vocalizations at 8 months was related to a greater degree of wariness toward the approach of a stranger at 8 months.

Table 36 presents the correlations between infant negative vocalizations in the feeding situation at 3 and 8 months and the infant's response to a brief separation from his mother at 8 months of age. (This was a point biserial correlational analysis.) Crying during the feeding at 3 months was predictive of fretting in response to the mother's exit at 8 months. Infants who fretted during the Brief Separation also emitted more negative vocalizations, and fussed more during feeding at 8 months of age.

The incidence of infant negative vocalizations observed in the feeding situation at 3 and 8 months of age (see Table 36) were correlated with the infant's behaviors exhibited at 12 months of age in the Strange Situation Behavior Instrument (SSBI). Infants who expressed more negative vocalizations in the feeding situation at 8 months also cried more in episodes 4 and 7 of the SSBI.

Behavioral observations in the structured situations. Behaviors exhibited in response to a stranger's approach and the mother's brief absence (observed at 8 months infant age) were entered into correlational analyses with the scores from the Strange Situation Behavior Instrument (SSBI) (obtained at 12 months infant age). Several consistent longitudinal patterns were noted. Increased wariness and distress at 8 months predicted increased crying, more intense contact maintaining of mother and avoidance of the stranger at 12 months. Conversely, little or no concern in response to the brief separation from mother at 8 months predicted less intense proximity seeking to mother and more proximity seeking to the stranger in the 12 month strange situation. "Activation", (following or searching for the mother) at 8 months was positively related to more search behavior at 12 months infant age. The following discussion details the specific variables and correlations that were considered. The Stranger Approach Progression and the SSBI relationships are described first, followed by the Brief Separation and SSBI correlations.

The degree of wariness which the infant exhibited when approached by a stranger at 8 months of age was entered into a correlational analysis with the behaviors the infant exhibited at 12 months of age in the Strange Situation Behavior Instrument (see Table 37). The presence of a higher degree of wariness at the approach of the stranger at 8 months infant age, was related to more intense contact maintaining behaviors toward the mother in episodes 5 and 8, more intense proximity seeking behaviors to mother in episodes 5 and 8, and more intense cry behavior in episodes 4, 6, and 7. Thus infants who, at 8 months in response to the approach of a stranger, tended to cry, turn away, avert their gaze, and/or have a distressed facial expression also tended, at 12 months, to maintain contact and/or proximity to their mothers and to cry in her absence.

The incidence of the infant's display of no concern, momentary concern, fretting, or crying and activation when briefly separated from his mother at 8 months of age was correlated (point biserial analyses) with the behaviors manifested by the infant in the SSBI at 12 months of age (see Table 37). The presence of only momentary concern or a lack of concern on the part of the infant when briefly separated from his mother correlated negatively to affiliative behaviors to the stranger at 1 year of age. That is, absence of anxious concern during the brief separation was predictive of low contact maintaining behaviors toward the mother during episodes 5 and 8 of the SSBI.

Also infants who exhibited no concern during the brief separation at 8 months displayed less intense proximity seeking behaviors toward their mothers in episode 8. These infants also cried less when they were separated from their mothers in episodes 4 and 6 of the SSBI. Infants who exhibited little concern in the brief separation displayed more intense proximity seeking behaviors to the stranger and less intense contact resisting behaviors toward the stranger in episode 7.

The incidence of crying or fretting in the brief separation was related positively to affiliative behaviors toward the mother, cry behavior, and resistive behaviors toward the stranger in the SSBI. The presence of fretting or crying at 8 months was predictive of a high degree of contact maintaining behaviors during episodes 3, 5, and 8 and proximity seeking behaviors during episodes 2 and 8 directed toward the mother at 12 months. (These infants also displayed more intense contact resisting behaviors toward the mother in episode 5.) Infants who cried or fretted at 8 months also cried in the episodes in which they were separated from their mothers at 12 months (episodes 4, 6, and 7). In episodes 3 and 7, more intense contact resisting behaviors and more intense proximity avoiding behaviors were demonstrated toward the stranger by those infants who had fretted or cried during a brief separation from their mothers at 8 months.

The incidence of activation toward the place where the mother disappeared (or "searching" for her) when briefly separated from her at 8 months did not consistently correlate with the infant behaviors directed toward the mother or the stranger during the SSBI at 12 months of age. However, "activation" was predictive of following (higher intensity of search behavior) in episode 4 and increased cry behaviors in episodes 4 and 6 of the SSBI.

What is the nature and extent of the relationship between maternal characteristics and infant developmental level and social behavior?

A primary concern of behavioral scientists is to ascertain the relationship between characteristics of caregiving and infant behavior. In this study maternal caregiving characteristics were assessed by several observation and interview techniques; data analyses performed in response to this research question utilized the following maternal variables:

1. Selected observation-based maternal care ratings
2. Selected interview-based maternal ratings
3. Factor scores derived from all interview and observation-based ratings.

Infant characteristics analyzed here included infant developmental level (Bayley Scales) and infant social behavior, and the infants' behaviors at 12 months, scored from the Strange Situation Behavior Instrument (SSBI).. All analyses are based on data of 164 mother-infant pairs.

Infant developmental level. Correlations among the factor scores from the three-factor analyses of ratings of maternal behaviors and attitudes and the mental and psychomotor development indices from the Bayley Scales of Infant Development are presented in Table 38. Positive scores on the following caregiving characteristics related to high mental development scores:

1. Parental Involvement Perinatally (Factor 1, Phase I)
2. Infant Centered Interaction (Factor 6, Phase I)
3. Positive Mother-Infant Interaction (Factor 1, Phase III)
4. Quality of Mothering (Factor 1, Phase IV)
5. Maternal Role Investment (Factor 3, Phase IV)
6. Pleasurable Physical Contact (Factor 5, Phase IV)
7. Visual Stimulation (Factor 7, Phase IV)

Although there were significant correlations between maternal characteristics and psychomotor indices there were no apparent trends or consistent clusters of related attributes.

Based on the hospital interview, three factors from the first factor analysis were significantly predictive of subsequent performance on the Bayley Scales of Infant Development. Factor 1, Parental Involvement Perinatally, was predictive of the Mental Development Index at 12 months of age; parents who reported a high degree of perinatal involvement had infants with a higher Mental Development Index at 12 months of age. Factor 4, Preference for a Quiet Life and Baby or Energy Investment, was predictive of the Psychomotor Development Index at 12 months of age; that is, mothers with a higher degree of preference for an active life and baby, had infants with higher Psychomotor Development Index scores at 12 months of age. Factor 6, Infant Centered Interaction, was predictive of the Mental Development Index at 8 months of age. Mothers who expressed a greater degree of infant-centered interaction, had infants with higher Mental Development Index scores at 8 months of age. There were no other significant correlations between the Phase I factor analysis and the Bayley Scales of Infant Development scores at 3, 8, and 12 months infant age.

Based on the ratings from the 3 month home visit and interview, factor 1, Positive Mother-Infant Interaction, was related to the Mental Development Index at 3 months of age and the Psychomotor Index at 3 months of age as well as predicting the Mental Development Index at 8 months of age and at 12 months of age. The higher the degree of positive mother-infant interaction observed at 3 months infant age, the higher the Mental Development Index and Psychomotor Development Index scores at 3 months, and the higher the Mental Development Index at 8 and 12 months infant age. Factor 3, Mother's Belief in her own Irreplaceability, was related to the Psychomotor Development Index at 3 months of age; the more the mother believed herself to be irreplaceable, the higher the Psychomotor Development Index at infant age 3 months. Factor 4, Sensitivity and Cooperation in Feeding, was predictive of the Psychomotor Development Index at 8 months of age with mothers who showed greater sensitivity and cooperation in feeding at 3 months infant age, having infants with higher Psychomotor Development Index at 8 months of age. Factor 6, Mother's Perception of the Infant as Cuddly, was predictive of the Psychomotor Development Index at 12 months of age; mothers who perceived their infants as cuddly at 3 months of age, had babies with higher Psychomotor Development Index scores at 12 months of age. No other significant correlations were found between the Phase III factor analysis and the Bayley Scales of Infant Development at 3, 8, and 12 months infant age.

Six of the seven factors resulting from the factor analysis of the maternal attitudes and behaviors ratings made from the 8 month home visit and interview were significantly related to scores on the Bayley Scales of Infant Development. Factor 1, Quality of Mothering, was related to the Mental Development Index at both 8 and 12 months of age; the more sensitive and nurturant was the quality of mothering, the higher the Mental Development Index at infant ages 8 and 12 months. Factor 3, Maternal Role Investment, was related to the Mental Development Index at 8 months of age; that is, the greater the mother's investment in her maternal role at 8 months, the higher the infant's Mental Development Index at this age. Factor 5, Pleasurable Physical Contact, was related to the Mental Development Index at 8 months infant age but negatively predictive of the Psychomotor Development Index at 12 months infant age; the greater the amount of pleasurable physical contact at 8 months of age, the higher the Mental Development Index at that same age, but the lower the Psychomotor Development Index at 12 months of age. Finally, factor 7, Visual Stimulation, was significantly related to the Mental Development Index at 8 months of age and significantly predicted the Mental Development Index at 12 months of age. The greater the amount of visual stimulation provided for and enjoyed by the infant at 8 months of age, the higher the Mental Development Index at 8 and 12 months of age. There were no other significant correlations between the Phase IV factor analysis and the Bayley Scales of Infant Development at 8 and 12 months infant age.

Infant social behavior. The infants' behaviors directed to the mother and a stranger and his behavior in response to maternal separation constituted the social behaviors studied at 12 months infant age. These attributes were observed in a context called for by the Strange Situation Behavior Instrument. To explore the relationship between maternal characteristics and infant social behavior, certain maternal data and the infants' SSBI data were subjected to correlational analysis. Those maternal variables selected for analysis were chosen to represent each phase of data collection and as well to represent aspects of quality of infant caregiving, investment in maternal role, and investment in careers. The discussion following first will consider the relationship of SSBI data with selected factor scores. Following that discussion, SSBI data will be considered in relation to observation-based and interview-based maternal data respectively.

The following factor scores were selected for this correlational analysis:

1. Interest in Maternal Role (Phase I)
2. Sensitivity and Cooperation in Feeding (Phase III)
3. Mother's Belief in her Own Irreplaceability (Phase III)
4. Mother's Belief in her Own Irreplaceability (Phase IV)
5. Maternal Separation Anxiety (Phase IV)

The results of the correlational analyses of the factor derived from the hospital interview (Phase I factor analysis) and the behaviors of the infant during the SSBI at 1 year of age appear in Table 39.

Interest in Maternal Role yielded consistent significant results. Infants of mothers rated as having a higher interest in the maternal role demonstrated a greater intensity of contact maintaining behaviors toward their mothers in episode 8; however they demonstrated inconsistent reactions in contact resisting behaviors directed toward the mother. In episode 3, prior to mother's departure, infants of mothers rated as having a higher interest in the maternal role demonstrated less intense contact resisting behaviors; in episode 5, following the first maternal absence, these infants demonstrated more intense contact resisting behaviors than did infants whose mothers were rated as having a lower degree of interest in the maternal role. The infants of mothers rated as having a higher interest in the maternal role consistently demonstrated more intense contact resisting behaviors toward the stranger than did infants of mothers having a lower interest as evidenced in episode 7 and proximity avoiding behaviors, in episodes 3 and 7. Thus, mothers who in the days immediately following the birth of their infant expressed a higher degree of interest in the maternal role had infants who, at 12 months, demonstrated more intense contact maintaining behaviors toward their mothers and more intense resistive behaviors toward the stranger. Conversely, mothers who expressed an interest in a career, job, or occupation (receiving a low score on factor 2) had infants who demonstrated an opposite pattern at 12 months: less contact maintaining behaviors toward the mother and more intense affiliative behaviors toward the stranger.

The results of the correlational analysis of the infant behaviors exhibited during the SSBI at 12 months infant age and the factors derived from the interview- and observation-based variables measured when the infant was 3 months of age appear in Table 39. Mother's Belief in her own Irreplaceability and Sensitivity and Cooperation in Feeding, yielded consistent and significant results. Infants of mothers who believed themselves as "not replaceable" displayed more intense contact resisting behavior to the stranger in episode 4 and more intense proximity avoiding behaviors of the stranger in episode 3. The relationship of this factor score with behaviors exhibited toward the mother was inconsistent; infants of mothers rated high in irreplaceability demonstrated less intense contact resisting behaviors toward the mother in episode 3 and a higher intensity contact resisting behaviors toward the mother in episode 5.

Infants whose mothers were rated as highly cooperative and sensitive in feeding displayed more intense contact maintaining behaviors toward the mother in episodes 3 and 5 and more intense proximity seeking behaviors toward the mother in episodes 3 and 5. (These infants also exhibited a greater intensity of contact resisting behaviors to their mothers in episode 5.) Infants whose mothers were rated as sensitive and adaptible in the feeding situation also cried more in episodes 4, 6, and 7. These infants also displayed more intense contact resisting behaviors toward the stranger in episode 3 and more intense proximity avoiding behaviors to the stranger in episode 3.

In short, mothers who believed themselves irreplaceable to the infant's welfare at 3 months of age, had infants at 12 months of age who demonstrated more resistive behaviors toward a stranger. Mothers who were rated as more sensitive and cooperative in feeding their infants at 3 months of age had infants who demonstrated more affiliative behaviors toward them, more cry behaviors in their absence, and more resistive behaviors toward a stranger at 1 year of age.

The results of the correlational analyses of the infant behaviors exhibited during the SSBI at 12 months and the factors derived from the maternal interview- and observation-based variables measured when the infant was 8 months of age appear in Table 39. Maternal Separation Anxiety, and Mother's Belief in her own Irreplaceability, yielded consistent, significant results.

Infants of mothers who exhibited essentially no apprehension over leaving them in the care of others exhibited less intense contact maintaining behaviors toward their mothers in episode 8 and less intense proximity seeking behaviors toward them in episodes 5 and 8. During episode 4, these infants exhibited less intense search behaviors and cry behaviors. These infants also manifested less intense contact resisting behaviors to the stranger in episode 4 and proximity avoiding behaviors to the stranger in episode 3; they also manifested a greater intensity of contact maintaining behaviors toward the stranger in episode 7 although a lesser intensity of proximity seeking behaviors was manifested in episodes 3 and 4.

A strong maternal belief of her own irreplaceability to the infant's welfare was related to a greater intensity of contact maintaining behaviors toward the mother in episodes 3, 5, and 8, proximity seeking behaviors toward the mother in episodes 3 and 8, contact resisting behaviors toward the stranger in episodes 3 and 7, proximity avoiding behaviors toward the stranger in episode 3, and cry behaviors in all episodes (4, 6, and 7) of the mother's absence. (This was also related to a greater intensity of proximity avoiding behaviors toward the mother in episode 5.)

Summarizing these relations between the two factors describing maternal characteristics at 8 months and infant behavior at 12 months, it is seen that infants of mothers who, at 8 months dreaded separation from their infants and were preoccupied with constant apprehension over non-maternal care, displayed a greater intensity of affiliative behaviors toward their mothers and were more distressed by her absence during the SSBI administered at 12 months of age. These characteristics were also related to a higher intensity of resistive behaviors directed toward the stranger.

Selected observation-based ratings of maternal behavior were correlated with infant SSBI socres in order to focus on areas of maternal fuctioning not treated by the factor scores. The observation-based scales to be discussed here all focus on caregiving activities observed at infant age 3 months that are not related to feeding (feeding activities seemed to be adequately assessed by the factor discussed above: Sensivity and Cooperation in Feeding). The following scales (originally developed by M.D.S. Ainsworth) are considered here as they correlated with SSBI behavior:

1. Amount of Physical Contact
2. Amount of Visual Contact
3. Amount of Auditory and Vocal Contact
4. Frequency of Play Interaction
5. Appropriateness of Mother's Initiations of Interactions
6. Effectiveness of Mother's Response to Baby's Crying

Findings from these analyses can be summarized briefly: the amount and appropriateness of stimulation offered to the infant (as measured by the six scales listed above) was related only to contact maintaining of the mother in the SSBI; and not to any other behaviors directed to mother or stranger. The direction of the relationships was the same for all six scales, the more frequent and appropriate the interaction, the greater the intensity of contact maintaining to mother in episodes 5 and 8, that is, after the mother had left the room. The following discussion presents in greater detail the variables and relationships on which the above statements were based.

Considering observation-based measures of maternal care not measured in the feeding context, six measures related positively to contact maintaining behaviors demonstrated toward the mother in the SSBI at 12 months of age (Table 40). These six variables relate to the amount and appropriateness of the stimulation offered to the infant by the mother. Infants of mothers who were rated as providing a greater amount of physical contact to their babies at 3 months displayed more intense contact maintaining behaviors in episode 8 (and more proximity seeking to the stranger in episode 4). During episodes 5 and 8, infants displayed more intense contact maintaining behaviors if their mothers were rated as providing a greater amount of visual contact and auditory and vocal contact. (This latter group of infants also displayed less intense proximity avoiding behaviors toward the mother in episode 5.) Infants of mothers who were rated as providing more play interaction displayed more intense contact maintaining behaviors in episode 8 (and more contact resisting to the stranger in episode 7). Infants of mothers who were rated as being more appropriate in their initiations of interactions with the infant exhibited a greater intensity of contact maintaining behaviors toward the mother in episode 5. More intense contact maintaining behaviors were displayed in episode 5 by infants whose mothers were rated as more effective in their response to their cries. It therefore appears that ratings reflecting greater amounts of maternal stimulation and more appropriate and effective interaction provided by the mother when the infant is 3 months of age are predictive of a greater intensity of contact maintaining behaviors exhibited toward the mother during the SSBI at 12 months of age.

(All of the observation-based variable scores of maternal care measured when the infants were 8 months of age were entered into a correlational analysis with the behaviors which the infant exhibited at 12 months of age in the SSBI. There were few significant results and those that were found were scattered; no consistent trends of relationships between maternal care variables measured at 8 months of age and the infant's behaviors at 12 months of age were manifested.)

Selected interview-based maternal ratings were correlated with SSBI behaviors in order to consider an aspect of maternal functioning not covered adequately by the observation-based ratings and the factor scores. Those interview-based variables selected for analysis are listed as follows:

1. Career Orientation (Phase III)
2. Career Orientation (Phase IV)
3. Perception of Infant's Distress at Separation (Phase IV)
4. Degree to Which Mother Feels Her Baby is Positively Attached to Her (Phase IV)
5. Degree to Which Baby Discriminates Between Caregivers (Phase IV).

Infants of mothers who expressed a higher career orientation manifested less intense proximity avoiding behaviors toward their mothers in episode 5, more intense proximity seeking behaviors toward the stranger in episode 7, and less intense contact resisting behaviors toward the stranger in episode 7.

Four interview-based maternal variables assessed at 8 months infant age were selected to be correlated with the infant behaviors exhibited in the SSBI at 1 year infant age. The results of these analyses are presented in Table 41.

Mother's career orientation when the infant was 8 months of age was related to the demonstration of a higher intensity of affiliative behaviors toward the stranger. Specifically, infants of mothers rated as highly career oriented exhibited significantly more intense proximity-seeking behaviors toward the stranger in episode 7.

The mother's perception of the infant's distress at separation from her at 8 months infant age was related to behaviors exhibited toward the mother and the stranger and cry behaviors at 12 months of age. Infants described as being highly distressed by maternal separation (receiving a low score on the rating scale) manifested a higher intensity of behavior in all categories of attachment behaviors directed toward the mother: contact maintaining behaviors in episodes 2, 3, 5, and 8; proximity seeking behaviors in episodes 2, 3, 5, and 8; contact resisting behaviors in episodes 2 and 5; and proximity avoiding behaviors in episode 5. These infants also manifested greater contact resisting behaviors toward the stranger in episodes 3, 4, and 7. A greater intensity of cry behavior in episodes 4, 6, and 7 was also displayed by these infants who were perceived by the mother at 8 months as being more highly distressed by maternal separation. Thus infants who were perceived as highly distressed by maternal separation at 8 months exhibited more distress (cry), higher intensities of affiliative and ambivalent negative behaviors toward their mothers, and higher intensities of contact resisting behaviors toward the stranger during the SSBI at 12 months of age.

Two of the interview-based variables, degree to which mother feels her baby is positively attached to her and the degree to which baby discriminates between caregivers, were positively related to affiliative behaviors demonstrated toward the mother, cry behaviors during the mother's absence, and resistive behaviors toward the stranger. Infants described by their mothers as strongly and positively attached to them were more likely to demonstrate contact maintaining behaviors towards their mothers in episodes 3, 5, and 8 and proximity seeking behaviors toward their mothers during episode 3. Infants described by their mothers as being highly discriminative of caregivers demonstrated a higher intensity of contact maintaining behaviors toward their mothers during episodes 3, 5, and 8 and a higher intensity of proximity seeking behaviors toward their mothers during episodes 3 and 8. (These infants also displayed more intense contact resisting behaviors toward the mother in episode 2.) With respect to cry behavior, infants described as being positively attached to their mothers exhibited more intense cry behaviors during episodes 4 and 7; infants who, at 8 months, were rated as highly discriminative of caregivers, displayed more cry behavior in episodes 4, 6, and 7. More intense proximity avoiding behaviors were demonstrated toward the stranger in episode 3 by infants who were rated by their mothers as positively attached to her and who were considered to be highly discriminative of caregivers. This latter group of infants also exhibited more intense contact resisting behaviors towards the stranger in episode 3.

What is the relation between infant social behaviors exhibited in the Strange Situation Behavior Instrument and maternal work status, and type, location, and time of onset of non-maternal care?

Because of the number of working mothers of infants, the need of those mothers to make a variety of child care arrangements, and lack of complete information on the impact of such conditions on infant behavior, this study focused on maternal relations among these variables. Multivariate analyses of variance (CANOVA: Component Analyses, 1971) were utilized to identify the possible effects of work status and type of alternate care, location of alternate care and time of onset of alternate care upon the infant's attachment behaviors toward his mother and his relation to a stranger at 1 year of age. It was possible to group and compare subjects (e.g., working vs. nonworking, individual care vs. group care, etc.); analyses were run for each behavioral category (i.e., proximity avoidance to mother); a repeated measures design permitted the use of episodes as a fixed factor.

Three broad questions serve to shape presentation of these results; those questions, and the samples employed in data analysis associated with the questions, are described below.

Due to the exploratory nature of this study, analyses were first performed with broadly defined samples which were later more stringently defined as specific variables became of interest.

The first major research question asked "What are the effects of the mother's work status upon the behavior of her infant at 1 year of age in Ainsworth's Strange Situation Behavior Instrument?" Two samples of infants were used to study these effects. The first sample (called Sample A), that of infants of nonworking mothers, consisted of 74 infants whose mothers had never worked during the first twelve months of the infant's life. There were 98 infants studied in the Strange Situation whose mothers had worked or were working at the time of the twelfth month visit. Of these, 83 infants composed Sample B, that of the broadly defined sample of infants of working mothers; the other 15 infants were excluded from this sample because their mothers had worked less than two consecutive months of their first year and/or they had had an absence from work of greater than three months after they had initially worked for two consecutive months. Seventy-five of the 83 working mothers worked at least six months in the infant's first year of life. (See Table 42)

The second major research question asked "What are the effects of the type of non-maternal care, individual or group, upon the behavior exhibited by the infant during the Strange Situation." The type of non-maternal care was defined for each infant in terms of the characteristics of the care which he had experienced the majority of the time he was absent from his mother. Twenty-eight infants of working mothers composed the sample (Sample C) used to study these effects. In order to examine group vs. individual care other variables, thought of as confounding, were controlled by selecting subjects that differed only in type of care. Thus, infants were not included in Sample C if: 1) they were cared for in their own homes; 2) they had initially experienced non-maternal care after they were 7 months of age; 3) they had more than one type of non-maternal care (e.g., babysitter and relative); and 4) they had experienced greater than two different caretakers within a specific type of care (e.g., three babysitters).

A third major research question asked "what are the effects of the location of non-maternal care upon the behavior of the infant during the

Strange Situation." The location of non-maternal care, in or out of the infant's own home, was defined for each infant in terms of the location of the care the infant experienced the majority of the time he was absent from his mother. This sample (Sample D) was composed of 31 infants of working mothers. It was also a refinement of Sample B of 83 according to the latter three points outlined previously and the additional exclusion of all infants cared for in group settings. These latter two samples (C and D) had to be separately defined because of the characteristics of non-maternal care which confounded the experimental design; in every case, group care had occurred out of the infant's home.

In summary, four major samples were used to investigate the effects of mother's work status, type of non-maternal care, and location of non-maternal care upon the behavior of 1-year-old infants in Ainsworth's Strange Situation Behavior Instrument. (Sample characteristics are tabled: Tables 43, 44, 45, 46). The four samples were defined as follows:

a) nonworking, N = 74

b) working (broadly defined), N = 83 (N = 27 part-time; N = 56 full-time)

c) working (narrowly defined), excluding infants cared for in their own homes, N = 28 (N = 17 individual care; N = 11 group care)

d) working (narrowly defined), excluding group care infants, N = 31 (N = 14 cared for in the home; N = 17 cared for out of the home).

Results

Episode effects in the SSBI. The most consistent significant finding throughout all analyses was that of episode main effect. It can be seen from Tables 47, 48, 49, 50, 51, 52, 53, 54, 55, 56 that five of the behavior variables directed toward the mother (contact maintaining, proximity seeking, search behavior, cry) and two of the behavior variables exhibited toward the stranger (contact maintaining, proximity seeking) showed a significant episode effect ($p < .001$). Contact resisting to mother in Samples A and B attained a significance level of $p < .001$, of $p < .01$ with Sample C, and no significance in Sample D. Proximity avoiding to mother also ranged from no significant episode effects to a significant effect ($p < .001$) depending on the sample used. In addition, contact resisting to the stranger in the analyses involving Samples A and B showed a significant episode effect ($p < .01$). The nature of this effect in all behaviors except search behavior and cry behaviors was increased intensity of behaviors as the episodes proceeded. In the instances of search behavior and cry behaviors, the intensity peaked in the second episode in which these behaviors were observed (episode 6 in which the infant was left entirely alone) and then diminished in the third episode of observation.

It should be noted, however, that episodes of the SSBI are structured such that threatening events (to the infant) occur later, after infant acclimation to the setting, and hence scoreable intense behavior tends to increase with episodes. Such significant episode main effects have been found before (Ainsworth and Bell, 1970; Ainsworth and Wittig, 1969) and seen previously by the Principal Investigator (Brookhart and Hock, Note 6).

Work status and infant behavior in the SSBI. The effect of the mother's work status was first studied by use of Samples A and B*. These findings suggest that the fact that the mother was working or had worked during the first year of the infant's life had no major influence upon the infant's performance during the Strange Situation; there were no significant main effects attributable to work status (see Table 47). However, contact resistance ($p < .07$) and proximity avoidance ($p < .084$) to the stranger did approach significance (see Table 48).

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*Samples A and B did not differ significantly on indices of mother age, mother education, and socioeconomic status.

A further analysis of the effects of the mother's work status was performed using Samples A and D, the latter being a more stringently defined sample which included only infants who had begun non-maternal care prior to 7 months of age, who had had relatively consistent care (only one type of care and no greater than two different caretakers), and who were cared for in individual care settings. Contact resistance to the stranger was found to be significant ($p < .05$) (see Figure 1); the infants of nonworking mothers ($\bar{X} = 1.750$) displayed a greater intensity of contact resistance to the stranger than infants of working mothers ($\bar{X} = 1.307$) (see Tables 49, 50).

Two statistically significant work status by sex interactions were noted: proximity seeking to mother ($p < .05$) and contact resistance to mother ($p < .05$) (see Table 47). In both instances, male infants of nonworking mothers manifested more intense behaviors than female infants, and female infants of working mothers manifested more intense behaviors than male infants; this will be discussed in greater detail with other findings relating to the sex of the infant.

In order to respond to concerns raised about the effects of full-time or part-time employment status, an analysis was performed using Sample B with 83 working mothers. No main effects were found (see Tables 51, 52). However, employment status did significantly interact with the episode effect in contact maintenance to stranger ($p < .01$) and proximity seeking to stranger ($p < .05$). In both instances, infants of full-time working mothers initially manifested a higher intensity of behavior, were surpassed by the infants of part-time working mothers during the second measurement episode, and again manifested greater intensities of behaviors in the last measurement episode. We know of no explanation to account for these findings.

Type of care of working mothers' infants and the SSBI. Effects of type of care upon behaviors exhibited during the Strange Situation were studied using Sample C, with infants of 28 working mothers. This sample was composed of infants who had begun non-maternal care prior to 7 months of age, who had had relatively consistent care (only one type of care and no greater than two different caretakers), and who were cared for in locations other than the infant's own home; 17 infants were cared for in individual care settings; 11 infants were cared for in group care settings. Contact resistance to the mother ($p < .01$) was found to significantly differ across groups (see Tables 53, 54). The group care infants manifested more contact resistance to their mothers than those cared for in individual care (group care $\overline{X} = 1.511$, individual care $\overline{X} = 1.038$) (see Figure 2).

Differences according to sex of infant. It was not the specific purpose of this study to investigate sex differences but a number of significant interactions reflect the need for careful consideration of this variable. Only one significant main effect was found in relation to sex; in Sample B female infants ($\overline{X} = 3.175$) displayed a significantly greater intensity of proximity seeking to their mothers than did male infants ($\overline{X} = 2.616$) ($p < .05$) (see Figure 3). In Sample C, involving 28 infants either in individual or group care out of the home, sex interacted with type of care in contact maintenance and proximity seeking to mother, cry behavior, and proximity avoidance to stranger ($p < .05$). Female infants cared for in group care exhibited greater intensities of these behaviors than did male infants in group care; infants cared for in individual care settings displayed the opposite trend - boys displayed greater intensity than girls. The mean values for these groups are as follows:

	Individual Care		Group Care	
	Males	Females	Males	Females
Contact Maintaining to Mother	3.172	2.069	1.982	2.969
Proximity Seeking to Mother	3.407	2.792	2.304	3.406
Cry Behavior	4.854	2.481	3.714	4.833
Proximity Avoidance to Stranger	1.688	1.350	1.143	2.250

(See Figures 4, 5, 6, 7)

As has been noted, there were also statistically significant ($p < .05$) work status by sex interactions to the mother in proximity seeking and contact resisting behaviors (see Table 47). Male infants of nonworking mothers manifested more intense behaviors than female infants and female infants of working mothers manifested more intense behaviors than male infants of working mothers. The means for these groups are as follows:

	Nonwork		Work	
	Males	Females	Males	Females
Proximity Seeking to Mother	3.064	2.808	2.617	3.175
Contact Resisting to Mother	1.264	1.191	1.170	1.329

(See Figures 8, 9)

Location of care and infant behavior in the SSBI. The effects of the location of non-maternal care, in or away from the infant's home, were studied by an analysis of Sample D, involving infants cared for within or outside home but not in group care. There were no main effects found attributable to the location of non-maternal care (see Tables 55, 56). Whether the infant was cared for in his own home or in a location apart from his home did not effect the infant's behaviors during the Strange Situation.

Onset of non-maternal care and infant behavior in the SSBI. Onset of non-maternal care was defined as the first month of the mother's initial two consecutive months of work. Using this definition of onset, infants were then grouped into three onset categories: Onset 1 = birth - 3 months; Onset 2 = 4 - 6 months; Onset 3 = 7 - 12 months. Onset was first studied in relation to type of non-maternal care in Sample B (see Tables 51, 52). Significant onset by type of care interactions were noted for proximity seeking to the stranger ($p < .05$) and contact resistance to the stranger ($p < .001$) (see Figures 10, 11). These findings are, however, presented with caution due to the fact that one cell of the analysis (Onset 3, group care) consisted of only two cases. Another analysis was performed omitting Onset 3 infants. This analysis of Onset 1 and 2 and Type of Care for Sample C produced no significant findings. An examination of the means of group and individual care for Onset 1 and Onset 2 shows that group care infants were generally less affiliative to the stranger than infants in individual care settings, and this difference was more pronounced if infants were initially enrolled between 4 - 6 months (Onset 2). However, this difference was not statistically significant. The means for these groups are as follows:

	Onset: Birth-3 Mos. Individual	Onset: Birth-3 Mos. Group	Onset: 4-6 Mos. Individual	Onset: 4-6 Mos. Group
Proximity Seeking to Stranger	1.939	1.600	2.095	1.583
Contact Resisting to Stranger	1.425	1.533	1.381	2.000

(See Figures 12, 13)

Discussion

Work status. Overall, there is a dearth of research concerning the mother's work status and the effects which it may have upon the development of the young child (Etaugh, 1974; Hoffman, 1974). As Hoffman and Nye state, "child development research indicates the importance of the early mother-child interaction, but no data are available on whether maternal employment affects the amount of stimulation and person-to-person interaction available to the infant, whether the mother's absence interferes with her serving as the stable adult figure needed by the infant, or whether the attachment of the infant to the mother or the mother to the infant is jeopardized." (1974, p. 165). This study investigated the question of "whether the attachment of the infant to the mother ... is jeopardized" by observing infants at 1 year of age using 74 infants whose mothers had never worked and 83 infants whose mothers had worked at least two consecutive months during the infant's first year of life and after beginning to work did not have an absence from work of greater than three months. Seventy-five of the 83 working mothers worked at least six months out of the first 12 months of the infant's life.

Analysis revealed no significant differences between the two groups of infants on any of the behaviors directed toward their mothers.

Whether the infant's mother worked or did not work seemed to have little influence upon the behaviors which the infants directed toward their mothers.

However, with respect to the stranger, the data analysis suggested that the infants of working mothers and the infants of nonworking mothers differed in their behaviors. The infants of the nonworking mothers seemed to be more resistive to the stranger than the infants of working mothers; this was evidenced in their higher intensity contact resisting and proximity avoiding behaviors to the stranger.

To further investigate the validity of these findings, another analysis was performed using a more stringently defined sample of infants of working mothers. This sample, N = 31, consisted of infants whose mothers went to work before the infant was 7 months of age, whose care arrangements were relatively consistent (only one type of care and no greater than two different caretakers), and who were cared for in individual care settings. These 31 infants were then compared with the 74 infants of the nonworking mothers. Again, the employment status of the mothers did not seem to influence the infants' behaviors directed toward their mothers. But the infants of nonworking mothers once more showed more resistive behaviors to the stranger; contact resisting behaviors (angry, petulent resistence of contact with the stranger by pushing or pulling away, hitting, or pushing aside or throwing down the toys which the stranger may offer) achieved significance ($p < .05$).

It is plausible to hypothesize that the resistive behaviors demonstrated by the infants of nonworking mothers reflected a general wariness or fear of the stranger intensified by these infants' comparative lack of experience of separation from the mother and/or caregiving by an individual other than the mother. Hence, in the episodes in which they were alone with the stranger, these infants of nonworking mothers were less able to accept the presence or contact offered by the stranger than were the infants of working mothers who had had various experiences of being cared for by an adult other than their mother.

Of course work status alone encompasses and is contaminated by a complex number of variables all of which interact with the mother's work status and some of which may be more important than work status _per se_. For example, studies of elementary school children have demonstrated maternal satisfaction to be more significant in predicting adjustment than maternal employment status _per se_ (Hoffman, 1974). As well, Etaugh (1974) has called for research which pays greater attention to those variables which mediate the effects of maternal employment, e.g., sex of the child and various conditions of maternal employment (full-time versus part-time, regular versus sporadic, duration of employment, age of child when mother started working, provisions for substitute care). It is not in the realm of this report to examine (or even determine) all of the factors which may be related to work status. However, to gain some insight into the variables related to the mother's work status and the infant's social behaviors at age one, we have chosen to examine more carefully the effects of: 1) the mother's part-time or full-time employment; 2) the type of substitute care (group or individual) which the infant is receiving; 3) the location of the substitute care (in or away from the infant's own home); and 4) the age of the infant at the initial onset of care.

Type of care. The studies dealing with the effects of different types of non-maternal care, e.g., individual or group care, are even more scarce than those concerned with the mother's work status. Most studies dealing with non-maternal care of infants and young children have compared infants in one type of care with infants raised at home by their mothers. For instance, recently there have been a number of studies dealing with day-care and home-reared infants (Blehar, 1974; Brookhart and Hock, Note 6 ; Caldwell, Wright, Honig, & Tannebaum, 1970; Carr, Note 7 Kearseley, Zelaso & Hartmann, 1975; Keister, 1970, 1971; Maccoby & Feldman, 1972).

This study wished to investigate the effects of different types of non-maternal care upon the infants' behaviors at 1 year of age as observed in the Strange Situation Behavior Instrument. An analysis was performed which involved 11 infants in group care settings and 17 infants in individual care settings. This sample consisted of only those infants who had started non-maternal care prior to 7 months of age, who had experienced relatively consistent care (only one type of care and no greater than two different caretakers), and who were cared for in a location other than their own home. This last criterion was necessary to eliminate the contaminating effect of location of care, since all infants in group care settings were cared for out of their own homes. The group care infants (N = 11) were identified by studying the characteristics of the care settings; these group care infants are those who are cared for out of their own homes by an adult who is unrelated to them and who takes care of at least one other child unrelated to herself or the study infant. These group care arrangements include infants in institutional group care settings or in the company of at least two other children to whom they are unrelated. Both samples were analyzed using an analysis of variance for contact maintaining, proximity seeking, contact resisting and proximity avoiding behaviors toward the mother and the stranger and search and cry behaviors in the absence of the mother.

Analysis showed a significant main effect for contact resisting behaviors toward the mother ($p < .01$); the group care infants manifested a higher intensity of these behaviors than did the infants cared for in individual settings. An examination of the raw data also revealed this trend held, though not statistically significant, with respect to contact resisting and proximity avoiding behaviors directed toward the stranger. Overall, the infants in group care settings manifested a greater intensity of resistive behaviors than infants cared for in individual settings.

A more in-depth examination of the behaviors which denote contact resistance, the behavior manifested toward both the stranger and the mother with greater intensity by the group care infants, reveals that this category is indicative of an angry, petulent mood. The infant is upset and angry and is unable to effectively communicate his need or to accept contact from the adult -- he seems to be at his "wits end", and likely, too frustrated to accomplish tasks.

A study of the group care and individual care infants' responses to the mother's exit gives further insight into these results. In all episodes, the infants cared for in individual care settings exhibited more search behavior and less cry behavior than did the infants in group care settings (see Figures 14, 15). Of particular interest are the codings of cry behavior. Both groups of infants were similar in intensity of crying when they were entirely alone (episode 6). However, with the return of a stranger (episode 7), the infants cared for in individual care settings were able to decrease their crying to a greater extent than infants cared for in group settings. It is plausible to hypothesize that the higher intensity contact resisting behaviors displayed by the group care infants reflected a general upset, angry mood which was strengthened and sustained by intense cry behavior. This anger was manifested toward both the mother and the stranger. A further examination of the meaning of crying at 1 year of age may provide a plausible explanation regarding why the group care infants should manifest higher cry and contact resisting behaviors than individual care infants. It is the belief of ethologists (Bowlby, 1958, 1969) that crying is one of the infant's earliest signalling behaviors to promote proximity between himself and his mother. Longitudinal observations of infant-mother pairs during the first year of life have discerned that by the end of the first year, crying is just one of the ways that the infant communicates. The frequency and duration of this crying as related to other, more subtle forms of communication was found to be dependent upon the mother's response to this crying. The more responsive the mother was to the infant's crying in the first year of his life, the less inclined was the infant to cry, but to use other modes of social signals. Furthermore, although some maternal responses (e.g., contact, feeding), were more effective terminators of crying, the single most important factor associated with the decrease and duration of crying in the first year was determined to be the promptness with which the mother responded (Ainsworth, Bell, & Stayton, 1971; Bell, Note 4; Bell and Ainsworth, 1972). Behaviors important to the cessation of crying, such as prompt and consistent response by the adult, would seem to be different for group care and individual care infants. In a group care setting, the infant is just one of many vying for the caregiver's attention; thus, his cries would probably not be answered as consistently and/or as promptly as the infant who is the sole recipient of the caregiver's attention. It would thus be expected that the group care infants would not have developed more efficient modes of communication as would have infants cared for in individual settings. The group care infants would cry more and search for their mothers less than the individual care infants. The group care infants would also seem to be angrier and more upset as they relied on crying behavior to communicate their feelings rather than on more efficient means of communication as the individual care infants were able to utilize. This anger would be expressed toward either adult, the stranger or the mother and be manifested in contact resisting behaviors. Thus, the group care infants who had had less experience than the individual care infants with consistent and/or prompt answers to their cries had not developed other modes of communication and relied more on crying and angry resistant behaviors to signal their need to regain contact with their mothers.

Further support is added to this interpretation by the results of a study (Hock, Coady, Cordero, Note 9) involving 9 - 12-month-old twins and singletons in the Strange Situation. In that study, twins were found to be more contact resisting to the mother ($p < .01$) and to the stranger (ns) than were singleton infants. It would seem that twins, more so than singletons because of the necessary condition of twins sharing their mother's attention, would experience a lesser degree of maternal promptness in response to their signals. Hence the former would manifest behavior patterns more consistent with those exhibited by the group care infants who were also sharing a caregiver than would the latter, the singleton group.

Findings of type of care by sex interaction will add further insight into the effects of type of care upon the behavior of 1-year-old infants.

Sex of infant. As noted previously, it was not a major thrust of thus study to examine the effect of the sex of the infant upon the behaviors which they exhibited in a strange situation at 1 year of age. We did, however, examine this variable and found several interesting results.

Only one main effect due to the sex of the infant was determined. In the sample of 83 working mothers, female infants were found to exhibit more intense proximity seeking behavior towards their mothers than male infants. A review of the literature relating sex of infant to differences in proximity, touching, or resistance to separation from the mother yields conflicting reports. Maccoby and Jacklin (1974) report that "the large majority" of 32 studies reporting observational data on such behaviors find no sex differences. A number of studies report girls showing more attachment behaviors than boys (Beckwith 1972; Bronson Note 5 ; Brooks & Lewis 1974; Goldberg & Lewis 1969; Lewis, Weinraub, & Ban 1972; Marvin Note 11; Messer & Lewis 1972). Conversely, the literature also contains a number of reports of boys being more upset at separation and seeking close proximity to parents (Brooks & Lewis 1974; Corter 1973; Feldman & Ingham 1975; Maccoby & Jacklin 1973; Shirley & Poyntz 1941). In these studies showing greater intensity of attachment behavior in girls, the measures came from situations where the parent and child were present together. In the research showing boys more attached, the measures came from separation episodes. It therefore appears that boys are more sensitive to separation experiences than girls, although this result does not emerge in all studies of separation (Maccoby & Jacklin 1974).

Perhaps this latter interpretation, that boys are more sensitive to separation experiences than girls, partially accounts for the discrepant findings in the previous literature. The sexes might react differently to separation experiences and other experiential variables which enter into, but are not explicitly analyzed in the experimental research. In this study, we found sex of infant interacting with the experiential variables type of care the infant received and work status of the mother. This interaction was similar in all cases and was manifested chiefly in behaviors directed toward the mother. Sex of infant interacted with the type of care the infant received for contact maintaining and proximity seeking behaviors manifested toward mother, cry behaviors, and proximity avoiding behaviors directed toward the stranger. Sex interacted with work status in proximity seeking and contact resisting behaviors toward the mother. In each case for these behaviors, individual care boys (and boys of nonworking mothers) and group care girls (and girls of working mothers) displayed a greater intensity of the behavior than did individual care girls (and girls of nonworking mothers) and group care boys (and boys of working mothers). As can be seen, similar patterns of behaviors were noted for home-reared and individual care infants relative to the patterns of behaviors manifested by infants of working mothers and those cared for in group care settings. It would seem that this might be the case because of similarities of experience. The experiences of the individual care infants, more so than those of the infants in group care, would resemble those of the home-reared sample, characterized as "homey", having a noninstitutional setting and 1:1 caretaker ratio providing fewer experiences with strange adults, and so on.

Carr (Note 7) has noted a similar interaction with regard to attachment/exploration and the importance of vision in mother-child contact. Forty 2-year-olds balanced by sex and day care/home-rearing were observed in four situations involving the positioning of the mother (near or distant, with or without visual contact) and a group of toys. The results indicated that home-reared boys and day-care girls were more concerned with the mother's position than were home reared girls and day care boys. Brookhart and Hock (Note 6) also found a similar interactional pattern with regard to home reared and day care infants' expression of affiliative behaviors to the stranger.

These findings indicate the complexity of factors relating to the infant's behaviors to his mother in a strange situation. If boys are more susceptible to separation stress, this reaction seems to have been attenuated by the experiences offered in day care or alternate caregiving, including introduction to a number of strangers and experience with unfamiliar settings. The home reared and individual care male infants, comparatively lacking in this experience, seemed to be more highly susceptible to the stress of the strange situation. Though the exact meaning of these interactions cannot be determined at this time, the fact that such interactions have been found to exist point to the caution one must exercise when making or appraising statements about sex of infant.

Summary of Major Findings

This investigation, in a longitudinal approach, sought to describe the social-emotional development of the infant as it was influenced by maternal and infant attributes and alternative approaches to infant care. Data was analyzed for 172 mother-infant pairs who were seen at the birth of the infant, and at 3, 8 and 12 months infant age. The following discussion summarizes the major findings.

I. Maternal Socio-economic Status and Other Demographic Characteristics

Several points of interesting relationship emerged between variables linked to socio-economic status (SES) and other demographic characteristics. First, in examining patterns of demographic variables associated with differing maternal attitudes and behaviors two subsample groupings emerged: mothers who tended to be older, married and married for longer periods of time, and having a higher socio-economic status; and mothers who tended to be younger, unmarried, and of a lower socio-economic status. The former group, on the Maternal Attitude Scale (MAS), were characterized by adaptive attitudes in channeling children's aggressive impulses, reciprocity of communication with their infants, and acknowledging of the emotional complexity of child care. (These findings are similar to those of Tulkin and Cohler (1973), who reported attitudes of middle class mothers, when compared to blue-collar mothers on the MAS, as reflecting more moderate control of aggressive impulses, greater encouragement of reciprocity, greater acceptance of the emotional complexity of child-rearing, and greater comfort in perceiving and meeting infants' physical needs.)

As well, in the present study the older-married-high SES group expressed greater parental involvement in the perinatal period and more positive mother-infant interaction at 3 months infant age. At 8 months infant age they were rated as more sensitive, adaptive and nurturant and more often offered visual stimulation. On the other hand, younger, unmarried mothers tended to be more confident of their child care skills at the birth of their infants. Such differences are not here being labelled sound or unsound; simply, the socio-economic class-related differences apparent in patterns of variables of this study follows the picture outlined in previous work (Caldwell, 1964; Tulkin and Kagan, 1972; Wachs, Uzgiris, and Hunt, 1971).

Factors derived from observation and interview-based data collection at 3 and 8 months infant age were associated with work status. Working mothers were rated as more independent. Non-working mothers were rated as possessing stronger beliefs in their irreplaceability, having more anxiety about separation from their infant and receiving more pleasure from physical contact.

II. Continuity of Maternal Attributes

Measures obtained of maternal attitudes and caregiving attributes over the infant's first year of life appear to organize into several longitudinal patterns of particular interest. The patterns encompass what appears to be (1) a portrayal of consistent mothering characteristics beginning prior to birth of the infant and representing what are thought to be infant responsive, "adaptive" mothering behaviors, and (2) a portrayal of mothers who evolve a set of beliefs about their irreplaceability to their infants which relates to the stress they find involved in brief separations from their infant. Each of these patterns will be treated separately.

The pattern of consistent, infant responsive mothering characteristics is complex but not unclear. Consistency was observed in the time sampled feeding behaviors at 3 and 8 months infant age. The frequency of maternal vocalizations at 3 months was predictive of the frequency of maternal vocalizations at 8 months infant age. In addition, these time sampled behaviors were related to ratings of maternal attitudes and caregiving abilities. Both a high degree of interest in the maternal role and parental involvement perinatally, reported at the birth of the infant, were related to greater amounts of maternal vocalizations (respectively) at the 3 and 8 month feeding observations. Maternal vocalizations at 3 months infant age were also positively related to a concurrent measurement of positive mother interaction. At 8 months infant age, maternal vocalizations were positively related to concurrent ratings indicating a sensitive quality of mothering, pleasurable physical contact, and the provision of visual stimulation for the infant. Thus, not only was the measurement of maternal vocalizations consistent from 3 to 8 months, but this behavior was also related to various derived factors indicative of sensitive, nurturant, adaptive qualities of mothering.

There emerges a pattern of adaptive, infant-centered mothering in which compatible aspects of mothering are evident prior to the birth of the infant and remain stable through the early months of caregiving. At the birth of the infant these adaptive mothers report a great deal of preparation for and anticipation of their infant's birth; at 3 months infant age they are highly accepting of their infants and delight in them, relate to them with greater and more developmentally appropriate types of stimulation, have interests in social interaction with their infants, and are able to report in detail their infant's behaviors; at 8 months infant age they excel in providing appropriate and greater amounts of stimulation and see their infant in a positive light and delight in him. They also believe that their infant's aggressive impulses should be rechannelled rather than inhibited, that infants can communicate and that this communication should be encouraged, that a mother can enjoy her infant without being overly stifled or stifling, and that mothers do have doubts, concerns, and ambivalent feelings regarding child care practices. Hence, this pattern of mothering may suggest the presence of an infant-centered mother who prepares from the time of birth for caring for her infant, is sensitive to infant needs, and provides appropriate stimulation to the infant to facilitate a positive mother-infant relationship and the healthy development of the infant.

A second pattern of variables portrays mothers who evolve a set of beliefs about their irreplaceability to their infants. Mothers' degree of career orientation was stable in its relationship to mothers' expressed investment in and positive attitudes toward the maternal role over the infant's first 8 months of life. As well, a high interest in the maternal role at the birth of the infant was related to high maternal beliefs in her own irreplaceability at 3 months infant age and a low rating on (and thus a high amount of) maternal separation anxiety at 8 months infant age, while mother beliefs in her irreplaceability at 3 months infant age was predictive of similar feelings at 8 months infant age and also greater separation anxiety.

Thus, a pattern emerges of mothers who at the birth of their infants express highly positive attitudes toward the maternal role and little career orientation, and who are more likely through the first 8 months of infant life to report and manifest attitudes which delegate to themselves importance to the infant's well-being. Not only do these mothers perceive themselves as having positively attached infants who are highly discriminating among caregivers, and greatly distressed when left in the care of others, but also they themselves dread separation from their infants and are concerned about nonmaternal care in the light of believing themselves indispensable to their infants.

III. Determinants of Infant Social Behavior at 12 Months of Age

The infant's social behavior exhibited in the Strange Situation Behavior Instrument (SSBI) at 12 months of infant age was predicted by a number of variables; they include*:

1) maternal caregiving behaviors;
2) infant behaviors exhibited previously in social contexts;
3) maternal perception of mother role; and
4) maternal employment status and type of alternative care provided to the infant.

Each of these variables will be discussed in the following sections in turn.

Maternal caregiving behaviors. Two types of caregiving behaviors assessed by interview and observation appeared to systematically predict SSBI behavior of the infant. Those caregiving behaviors can be characterized as:

1) adaptive behavior, exhibited by mothers to meet specific infant desires (implicit) and preferences (explicit); and

2) initiative behavior, exhibited by mothers to provide contact and stimulation -- usually referring to amount of stimulation and appropriateness of initiation of stimulation.

The presence of "adaptive behavior" in this study was manifested in behaviors rated at 3 months reflecting mother sensitivity and cooperation in feeding. Thus, high ratings on the factor Sensitivity and Cooperation in Feeding reflected maternal behavior tailored to meet the food-related desires and requests of the infant (requests related to type of food and rate and amount of intake). Infants of mothers who adapted their behavior to meet specific baby desires in the feeding situation were seen in the Strange Situation to exhibit intense contact maintaining and proximity seeking behaviors toward their mothers in episodes 3 and 5; these infants grew greatly distressed (crying more in all episodes), and angrily resisted contact with the mother when she returned (following her initial exit); and these infants also exhibited contact resistance and proximity avoidance of the stranger.

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*It is interesting to note that neither socioeconomic status-related demographic variables derived from measures of the mother nor intant developmental measures derived from the Bayley Scales of Infant Development significantly predicted behavior in the Strange Situation Behavior Instrument.

Mothers who exhibited "initiative behavior" (that is, those providing more physical, visual, auditory, and vocal contact; playing more, and more often appropriately initiating interaction) had infants who in the Strange Situation exhibited more contact maintaining of mother in episodes 5 and 8. Although these infants exhibited a desire to maintain contact with their mothers after her exits, they did not exhibit more intense crying or more avoidance of the stranger.

The SSBI behavior of infants has been discussed in relation to these two types of maternal caregiving behaviors in order to emphasize the notion that a mother tailoring her behavior to meet every desire of the infant (perhaps to an excessive degree) may indeed make herself indispensable, resulting in an infant who, in her absence, grows highly distressed, shows angry and ambivalent behavior upon her return, and as well does not "warm up" to strangers. Conversely, mothers can appropriately initiate interaction with and provide much stimulation to their infants (and also be thought of as providers of "good quality" care), and have infants who in the Strange Situation do not exhibit more crying and more stranger avoidance and who exhibit more contact maintaining to mother only after she has once left the situation. High ratings on indices representing both types of maternal caregiving are generally thought to represent "good quality" mothering. Such ratings, however, seem to predict different infant behavior patterns in the SSBI.

Future studies, it seems prudent to suggest, should further delineate specific maternal styles which promote unique and different infant social behaviors. For now, it is apparent that several maternal styles, globally characterized as reflecting "high quality" maternal behavior (such as those represented in the factor scores used in this study), may relate to very different infant outcome behaviors.

Infant behaviors exhibited previously in social contexts. There is strong evidence that wariness of stranger and distress at a brief separation from mother at 8 months predicts distress in the Strange Situation at 12 months infant age. As well, there may be a basis to argue that the fussiness exhibited in these social situations is in part a function of a stable trait that might be labeled "infant irritability."

More infant fussing in the 3 month feeding situation was significantly related to the presence of fretting in mother's absence among infants in the Brief Separation at 8 months infant age. The presence of fretting in the Brief Separation was related to greater distress in the Strange Situation. As well, more negative vocalizations and fussing in the 8 month feeding situation were related to increased crying in the Strange Situation. In short, a potentially connected pattern of infant irritability emerges.

However, other factors discussed here that are influential on infant behavior are maternal behavior, maternal perceptions of role, maternal work status, and type of non-maternal care provided to the infant.

More data are necessary to be acquired and analyzed to substantiate the existance of stable infant traits of the sort suggested; the magnitude of the correlation coefficients was low in this study, likely suggesting that many factors beside infant "traits" play important roles in determining social behavior at 1 year of age.

Maternal perception of mother role. There appeared to be mothers in this study who at the birth of their babies were highly invested in their roles as mothers to the exclusion of other interests such as job or career. Additionally, at 3 months infant age some mothers indicated that they felt their infants' well-being would be sacrificed were they to leave even briefly; these mothers dreaded separation and were anxious while away from their infants. These mothers saw themselves as irreplaceable. Similar beliefs were expressed by certain mothers when their infants were 8 months of age. Generally, the mother's perception of her role as that of exclusive caretaker did not affect the 12-month-old infant's behavior directed to the mother in the Strange Situation; however, it did affect the infant's behavior directed to the stranger.

This pattern emerged in several ways. At 3 and 8 months infant age, the degree to which the mother felt her infant was strongly and positively attached to her, and was distressed at separacion from her, and the degree to which the mother was apprehensive regarding non-maternal care and dreaded separation from her infant, all were highly and positively related to the infant's display of resistive behaviors toward the stranger in the SSBI at 12 months infant age. As well, mothers who felt they were irreplaceable to the infant at 3 and 8 months infant age had infants who manifested a higher intensity of resistive behaviors toward the stranger at 12 months of age.

A finding related to maternal perception of mother role as worker relates to this pattern of infant behavior as well. A mother's stated interest in a career or job at the time of birth of her infant and at 3 and 8 months infant age was related to a higher intensity of infant affiliative behaviors expressed toward the stranger at 12 months infant age. Such a pattern of maternal perception of mother role on infant behavior as these findings suggest is deserving of further study focused on more detailed aspects of these variables.

Maternal employment status and type of non-maternal care. The infants of working and nonworking mothers did not differ significantly in their attachment behaviors directed toward the mother during the Strange Situation at 12 months infant age. With regard to the stranger, the infants of nonworking mothers displayed significantly more intense contact resisting behaviors than did the infants of working mothers. It may be that infants of working mothers had previously experienced more positive encounters with strangers, and thus were less resistive to a stranger they confronted in the Strange Situation*.

With respect to type of non-maternal care, infants cared for in group care settings exhibited more intense resistive behaviors toward mother and the stranger at 1 year of age than did infants cared for in individual settings. As well, female infants were found to exhibit more intense proximity seeking behaviors toward the mother than did male infants during the Strange Situation at 1 year of age. This result should be interpreted with caution, due to the number of complex type of care-by-sex and work status-by-sex interactions found in the data of this study. Male infants cared for in individual care exhibited more intense affiliative behaviors toward their mother, more intense cry behavior in her absence, and more intense avoidant behavior of the stranger than did female infants who were cared for in individual care settings. The opposite was true for infants cared for in group care settings: female infants manifested more intense behaviors than male infants. Likewise, male infants of nonworking mothers displayed a greater intensity of ambivalent behavior toward their mothers during the Strange Situation; female infants of working mothers displayed a greater intensity of ambivalent behavior toward their mothers.

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*No significant behavioral differences were found in the SSBI attributable to the mother's part- or full-time employment; as well, no differences were found in infant behavior in the SSBI related to location of alternate care, or infant age at onset of alternate care.

IV. Conclusion

Employment status of the mother and the related use of non-maternal care does not influence the nature of the mother-infant relationship as assessed in this study. Maternal characteristics, other than work status *per se*, are important as it is evident that maternal caregiving behavior, attitudes and role perception affect infant social-emotional growth. Specific maternal attributes although globally thought of as "good mothering", may lead to very different infant outcomes, conceptualized here as affiliative and/or avoidant behaviors directed to mother and a stranger. While refraining from attaching value-laden labels to infant behavior it is evident that certain maternal characteristics, particularly those that reflect strong beliefs in and adherance to *exclusive* maternal care, promote infant dependence on the mother and do not promote affiliative infant-stranger interaction.

The longitudinal nature of this study led to consideration of consistencies in infant and maternal attributes over time. This study presented some evidence to support the existence in infants of a temperament-like behavioral style which was based on over-time correlations of negative vocalizations and fretting exhibited in social contexts. Maternal attitudes reflecting beliefs in exclusive maternal caregiving and characteristics portraying infant-centered, adaptive approaches to child rearing showed considerable stability over the months of study.

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Appendix A

Interviews Used in the Study	Pages
Post-partum	1
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POST-PARTUM INTERVIEW
ALTERNATIVE APPROACHES TO INFANT CARE PROJECT
THE OHIO STATE UNIVERSITY

From your checklist I see that you:

Plan to stay home with your baby_____
Plan to have someone else care for your child_____
Do plan to stay in Columbus or the immediate area?___

Do I have the correct:

Address?:
Phone Number?:

INTERVIEW FOLLOWS

Description of study.
Define roles: i.e., team.

Demographic

Mother's occupation prior to this pregnancy___________
Father's occupation or head of household (specify)_____
Level of education of mother______________________
Level of education of father or head of household (specify)_____________________________________
Age of mother___________________________________
Age of father___________________________________
Are you married? Yes____ No____ How long?_________
Previously married? ____ ____ (How many times?)___
Was your husband previously married? Yes____ No_____
(PROBE: IF NO, WILL FATHER BE INTERACTING WITH BABY)__

A. Hospital Stay

Hosp. Stay Sat. Ex.

1. *Some mothers look forward to and enjoy their hospital stay. Others are anxious to get home. How do you feel about your hospital stay?
   *What do you look forward to most each day in the hospital?
2. *What is the most exciting and enjoyable thing that has happened since you have been here?
   (PROBE: MOTHER AS INDIVIDUAL)

Pat. Involve.

3. *Have you and ____(baby's name)______had many visitors?
   (PROBE: PATERNAL INVOLVEMENT)
   *What does your husband do with your baby when he visits? (Hold, feed, look).

Demo

4. *When you get home where will your baby get his medical care?
Pediatrician______________________________
Family Doctor_____________________________
Clinic__________________________________
Place___________________________________

B. Experience and Preparation

Mat. Anti.

1. *Have you taken any courses during this or prior pregnancies on pre-natal care, or delivery?
Yes______ No______

Pat. Int.

*Did the baby's father attend these classes with you? Yes____ No____
*Read any books? Yes_____ No______

IF SIBS
ONLY
Demo

2. *What are the:
Age(s) and name(s) of __(infant's name)__ brothers/sisters? _______________________
Number of people in household_________________
*Did you tell your other children about the birth of your new infant? What did you say?
*How have they responded to this preparation?
*Will your other child (depending on the age of other child) help or distract in the care of the infant?

Exp. Caring Inf.

3. *Have you had any experience caring for infants?
*What do you remember most about these experiences?

Depend.

4. *Do you plan to have someone help out when you first come home from the hospital? Yes_____
No______
*Who?
*How long would you like them to stay?
*How soon do you imagine you will feel up to taking care of everything?
*What will you do and what would you like your (nurse, mother, husband) to do?

Pat. Involve.

*How will your husband help out?
(PROBE: TO WHAT EXTENT HUSBAND WILL HELP)
*Are these arrangements exactly what you wanted?
*Do you feel that you would need more help than this?

C. Delivery and Baby
I would like to ask you something about your labor and delivery and your first experiences with your baby.

1. *How long were you in labor?

Pat. Int.

*Did the baby's father (or friend or relative -- who?) stay with you?

*Where did he wait?
*Was this as you wanted it?

2. *Were you awake when your baby was delivered?
*What did you think?

Pat. Int. *If University: Was your husband in the delivery room with you?
*What did he think about the experience?

Pos. Percept. of Inf. in Hosp. 3. *How long after delivery was it before you actually saw or touched your baby?
*This is a unique experience and women have all kinds of feelings: some are very surprised to find they are disappointed and even find it hard to believe this is their own child; do you remember how you felt?
(PROBE: SCOPALAMINE)

4. *Were you pleased (disappointed) about the sex of your baby?
*Why?
*Was your baby what you hoped for?

Pat. Involve. *Was the baby's father pleased?

Pos. Percept. of Inf. in Hosp. 5. *When you first say your baby what was (he or she) like (appearance, characteristics, etc.)?
*Did his/her looks please or disappoint you?
*Family resemblances?

6. *a) What are your feelings and plans about breast feeding compared with bottle feeding?
*Why (PROBE)

Att. to Non-Mat. Care *Will you let anyone else feed your baby? Father?
*Why? (Does she feel apprehensive about letting someone else feed baby?)

Feed. Plans *b) There are different opinions on whether a baby should be cared for on schedule or on a demand basis. Which would feel the most comfortable to you?
*Do you think you will be able to follow that choice?

Deg. Pref. Active, High Drive 7. *Babies seem different emotionally (temperament) from the very beginning. What kind of personality or temperament would you like your baby to have? (Vigorous vs. tranquil, alertness, quiet vs. crier, active vs. calm)
*What characteristics would you not like and how would you feel if they were present? (Contrast easy, calm with active, irritable.)

M. Source Stim. 8. *Tell me about the kinds of things that go on at your house when you're home -- lots of visitors? TV usually on, radio-music, (volume, activities).
*Is this the way you prefer? (Does she like lots of stimulation or not.)
*Do you think you'll have to change anything when you take the baby home?

*Mothers enjoy certain aspects of mothering more than others. What kinds of things do you think you will enjoy (specify activities)?
*What things may not be as much fun for you? (PROBE: FEED AND CARETAKE OR PLAY WITH AND STIMULATE?)

Mat. Appre. 9. *When they first come home with their baby, most mothers are not sure what to worry about and what not to. What do you think might worry you?
*Why?
*What would put your mind at ease?

Affect. Contact Baby 10. *You may have noticed that some babies are cuddly and like to be held while others don't seem to enjoy it. Suppose your baby doesn't like to be held and cuddled, how will you feel about it?
*What would you do? (Getting at comfort.)

11. *What would you get more pleasure from in relating to your baby -- social or physical contact, i.e., talking and smiling to the baby, or holding him close while cuddling and kissing him?

D. Philosophy of Child Care

1. Nurturance

Nurt. To Inf. *Many new babies require a lot of attention 24 hours a day, they need feeding,, changing, bathing or affection at any time of the day or night, often when it is inconvenient for the parents, sometimes babies cry a lot, sometimes they get sick; they can be pretty demanding.

- *a) How do you think this demandingness will be for you with your baby?
- Auton. vs. Cont. *b) People have different ideas about spoiling a baby -- what are your ideas?
  *At what age can a baby be spoiled? (PROBE: SHAPING LIFE AROUND CHILD OR VICE VERSA?)
  Demo. *What are your plans for child care for the next 12 months (refers to social, non-career related plans).
  *Babysitters - how frequently or regularly? (Daily, weekly, biweekly, or monthly?)
  *Who? (Family, friends, neighbors, or don't know.)

2. *As long as a child gets love do you think he could be equally well cared for by someone else?

Att. To Non-Mat. Care 3. *At the times when you leave (Infant's name), what concerns will you have in selecting care for him (Her)?

*a) What qualities would you look for in having someone else care for your baby? If relative, when relative not available.

*b) If you were to go to work or school and needed to make arrangements for care for your baby, what sort of arrangements would you prefer?
*Day care in center, group care in someone's home, a babysitter?
*Why? (PROBE: CONCERNS GROUP VS. INDIVIDUALIZED CARE: CARETAKER VS. SEVERAL: COMPETENCY AND QUALIFICATIONS OF CARETAKERS: IN HOME VS. AWAY)

E. Family Life

Confidence Mat. Skills

1. *Some women wonder how they will do as mothers. How about you?
*How easy do you think it will be for you to pick up the skills of caring for an infant?
*How do you think you will feel when you and your baby first come home from the hospital?

Mat. Invest.

2. *How important was it for you to have this baby? Why?
*How important is it for you to be a mother? (PROBE)
*What would your life be like if you couldn't have children?
*How many children do you want to have? Were you pleased to find you were pregnant?
(PROBE: WAS THIS PREGNANCY PLANNED?)
Planned: Yes______ No______

3. After leaving the hospital, mother and infant will live:
*a) Alone (cite circumstances)
*b) With husband and/or father in their own household.
*c) Other (cite circumstances such as in household of grandparents, ...)

Pat. Involve.

4. *Are you living with the baby's father?________
*How much does he participate in home life?
*What kind of work does he do around the house?

Pat. Involve.

5. *Do you think the baby's father will assist you in caring for him/her?
*What do you think he will do?
*Is there anything you feel that he would not do?

Pos. Att. Mat. Role

6. *All new mothers have to give up various aspects of their lives that they were leading before they had the baby, and they don't always find this easy in the beginning. What kinds of activities do you really enjoy?
*What if anything, will be more difficult for you to give up?

Pos. Att.
Mat. Role

*A baby (another baby) will be added work and responsibilities. An infant requires much time and care. Do you think you will feel "tired down."
(Extent she feels trapped.)

IF PRE-VIOUSLY EMPLOYED
Career Orient.

7. *When did you quit work? Date________________
How many months pregnant when quit work?_______
*Why did you quit?
*What did you like most about your work?
*What, if anything, did you dislike about your work?
*Would you like to go back to the same job?
*What percent of family income was contributed by your job?

Demo.

8. *Plans for Mother (next 12 months)
- *a) Stay home with child(ren)?
  Yes_________ No__________
- *b) Go to school? Yes_______ No__________
  When____________ Where__________________
- *c) Are you planning to return to work or start work while your baby is still small? Part-time or full-time? Why?
  When_______________ Where_______________
  Leave of Absence_________________________
- *d) Excellent child care can be costly. Is this a terribly important factor that you would need to consider in making a decision about working outside the home?

Career Orient.

9. *Some people say having a baby and a career together take a great effort. How do you feel about this?

Career History

10. *Did your mother work when you were little?
Yes____________ No____________
*What did you think of her working or other outside interests, hobbies? (Did her mother have any interests outside the home and how did she feel about "sharing" her mother with these interests?)
*Was she happy working?
*Are you in favor of mothers engaging in a career or making long-term occupational commitments or having a job?

IF PRE-VIOUSLY EMPLOYED
Career Orient.

11. *Do (did) you get personal satisfaction from your career or job?

Ext. Control

12. *How does ________'s father feel about mothers of young children working?

Ext. Control

13. *Does________'s father agree with your work or staying home plans?

14. *Have your friends or relatives expressed any opinions to you about mothers of young children working outside the home?
*Do most of your friends (peer group) work?

Degree Career Orient.

15. *Finally, concerning life in general, what are your major sources of satisfaction (or, what gives you the greatest happiness)?

General Impressions Interviewer's Name______

(Mother's attitude toward interview, circumstances surrounding interview, special personality characteristics.)
Mother's voice quality (animation, modulation).

M as Source of Stim. (Voice)

ALTERNATIVE APPROACHES TO INFANT CARE
March 1974
Maternal Role Interview Guidelines

Name of Mother ___________________
Interviewer's Initials __________

A. Hospital Experiences, Post-Partum

1. Opener: A great deal has happened since we last spoke and today we would like to review some of your experiences and fealings over the last 3 months; we would like to begin by asking how you felt about your hospitilization when your baby was born.

2. How many days did you stay in the hospital? What overall, was this like for you? Did you enjoy it or were you anxious to get home? Do you know why?

    a) After they deliver mothers usually have some kind of "let down": they feel tired or often "down in the dumps," did you notice that you felt this way? When did it begin? How long did it last? Sometimes these feelings begin after mothers are home; was it so for you? Or were you more "nervous"? Loss of appetite; loss of weight.
    b) If she acknowledges depression ask - do you recall any of the ideas you had (fears for self, baby, etc. and depressive fantasies). Women often have dreams after delivering, often upsetting ones, do you remember any that you had?

B. Contact with Infant

1. Mothers feel love at different times? Often it is quite a while. When did you first begin to feel love? What led to the feeling?

    a) Did you and your baby come home together from the hospital? If not, how soon afterwards did the baby come home? Why? What was this like for you?
    b) When they first come home with their babies, most mothers find it difficult in different ways; some don't feel quite ready yet to begin "going at it alone," others are "raring to go" -- do you recall what it was like for you?
    c) Newborns are small and helpless and they can"t communicate very well in the beginning and mothers wonder what to worry about and what not to; what did you do to get reassurance?
    d) Any health problems since you've been home? Cholic?

2. It takes mothers different periods of time to get to know their own babies, some feel "on the same wave length" quite soon while it takes many mothers quite awhile.

    a) How soon did you begin to feel this way? Have you any ideas how this happened? What helped? What made it difficult?

b) Some babies seem very easy to "get to know" while others can be a little puzzling. How is your baby in this sense? What made you feel this way? Do you feel you "understand" what your baby wants most of the time? Does he (she) make it hard for you to know? Do you feel that the type of baby you had effected your confidence as a mother? How do you think it would have been if you had a different (sex) baby? What sort of baby do you have? Describe him - happy, fussy, active, placid, easy-going, sociable.

c) Your baby is 3 months old now. Babies change in small ways over these first weeks, some much more than others; they may become more or less active, responsive, etc., they can start to smile and seem more responsive. Has your baby changed much from how he was in the first week? In what ways? What have you enjoyed seeing change? Why? What behaviors meant the most to you? Does the baby like to be rocked, held, cuddled, and touched? Soothed by these? (Physical Contact) (PROBE for preferences.) Does the baby enjoy being talked to or sung to? Played with? (Social Interaction)

d) Some mothers enjoy this time when the baby is dependent and helpless almost more than any other time while others can hardly wait for a more responsive child. Do you find yourself, as many mothers do, looking forward to the time when your baby can do more? Do you think that you may miss his (her) being so small and needing you for his (her) very survival? Have you any idea why?

C. Maternal Role, Satisfaction and Conflict

1. When did baby first become a person to you? What behaviors made you feel that way? Does he recognize you? When did he begin looking at you? What did you feel like?

2. All mothers enjoy certain aspects of caring for a baby more than others. What have you enjoyed the most? What has not been as much fun for you? What sort of things does the baby seem to enjoy the most? Is there anything in particular that interests him - holds his attention? Does baby entertain self?

3. You are aware by now that babies are pretty demanding creatures who need attention a great deal of the time; feeding, changing, comforting, etc. It's not always easy to get used to these demands, to being "on call" 24 hours a day. How have you found this to be for you?

   a) As babies go, and they differ a lot, do you think you have a very demanding baby? What makes you feel this way? What sort of things quiet him when he's upset or fussy?

   b) Does he (she) cry a lot? More (less) than you expected? How does it make you feel when he (she) just won't stop fussing or crying? What do you do? What else?

   c) Inquire about responsiveness to cry. How long she leaves child crying? Does she ever not respond to cry? Does she check baby to see if everything is all right? Let him cry it out? Does she always give in? Does he have fussy periods? Have you worried about spoiling your baby? When did you get concerned about this? Does baby sleep through the night? What are sleep patterns like? Schedule?

D. Physical Contact and Feeding

1. Babies, as you know by now, aren't all "cuddly," some don't even enjoy being held. What is your baby like in this respect? What makes you think so? If he is not cuddly, how did you decide that this was the case?

2. Some mothers enjoy cuddling, rocking, and holding their babies a lot of the time, others enjoy more other ways of communicating (talking, looking, etc.). What is it like for you when you hold your baby?

3. Are you breast or bottle feeding? Was it easy for you to make this decision? Did you change your mind when the baby was born? Did you for any reason have to discontinue breast feeding? If so, how did you feel about that? Was there any problem in changing to the bottle?

   a) Some babies are very fast feeders, others are slower and sometimes have difficulties. What is your baby like?
   b) Are you using schedule or demand feeding? How did you decide on this matter? When do you plan to wean him?
   c) When did you start solid foods? (PROBE for mother's knowledge of infant's preferences.) Find out how she manages "disliked" foods.

E. Role Conflict and Dependency

1. Did you have any help when you first came home from the hospital? Who helped you out and how long did they stay?

   a) It isn't always easy to have more than one mother in the house, how was this for you? What did you do? What did she do? Were there any problems? Did you miss her after she was gone?
   b) How did you feel when you first were on your own? This is usually a difficult time, did you feel that you had caught on to most of the tasks of being a mother or did you, as many mothers feel, wish you had a little more time?
   c) When you think over these last few months since you have had your baby how do you think you have done as a mother? In what ways would you like to improve?
   d) Many mothers feel they're not as good mothers as they would like to be. Have you ever felt this way? If so, do you feel this way often or only once in awhile? Now - when baby is 3 months?

      1) A lot of times.
      2) Occasionally.
      3) Never.

      Do you have any idea why?

2. Being home with a baby and having the responsibilities of a parent are a change for every mother. What has been the most difficult aspect of this change for you? What have you found is the hardest to give up? How soon would you like to have another child? Why? How many children would you like to have in the future?

F. Separation

1. When did you first leave your baby with someone else? Did you worry while you were gone?
2. What is the longest period of time you've left your baby with others? Why? and Where?
3. What arrangements have you made recently for care of your infant when you've had to be away from home?
4. Does it worry you now to leave your baby? Does your baby show any signs of being upset when you leave? Why do you think this happens? Does he act differently toward you when you return? Why? (Record detailed behavioral description.)
5. Do you feel bad (guilty) about leaving your baby with others?

(Please note: for working mothers ask the above questions twice; ONCE with reference to when she routinely leaves for work and returns to baby and AGAIN with reference to non-routine separations those not connected to her work, but perhaps an evening out with her husband).

G. Career FOR CURRENTLY WORKING MOTHERS: Have you returned to work? When?

1. Women have different reasons for working after marriage and the birth of a baby. (If necessary say, "Some work because they like to or want a career, some work because it helps to get extra things for the family, and some because the family needs money for necessities. How about you?") Did you return to the same job you had previously?
2. Has your job (conditions, etc.) changed any since you went back to work? (If returned to same job.) How? Do you like it better or worse now?
3. How do you feel about being away from your baby during the day? Do you enjoy being at work or resent it?
4. Do you plan to continue working? Any plans to quit? If so, when? Why?

CATEGORIES FOR SCORING WORKING MOTHERS

I. Financial Reasons
______ A. Family income needs (Necessity).
______ B. Acquire "extras" for family.
II. Non-financial Reasons
______ A. Need for accomplishment.
______ B. Need to occupy time or meet people.
III. Combination

I. Financial Reasons

A. Family income needs (Necessity) - includes working because we have to have the money to get along, chronic financial need, husband is unemployed or works only part-time at low paying type job - the family needs money.

B. Acquire "extras" for family - includes working to buy a car for me (second car), nicer things for us, an education for my child - to buy something.

II. Non-financial Reasons
   A. Accomplishment - includes working to feel independent, to do something important because enjoy the job, because like to work, because feel person should if have education to do so (especially special training (nursing, etc.).)
   B. Occupy Time or Meet People - includes would feel bored if stayed home, need to be with adults or friends of same age.

III. Combination
Financial and Non-financial Reasons - includes working to buy things but also enjoy using education, etc., frequently may occur as combining of "acquiring extras" and "accomplishment" from financial and non-financial reasons.

FOR NON-WORKING MOTHERS:

1. When people stop working, they often miss their job. How about you? If so, what do you miss most about it?
2. Do you have any plans to return to work? When? Why?
3. How do you feel about not working? Do you enjoy the extra hours that you have at home? (Or does she feel tied down, bored, etc.)

CATEGORIES FOR SCORING NON-WORKING MOTHERS

______ A. Satisfied with Housewife-Mother role, essentially no regret at quitting work.
______ B. Frustrated, Resentful of Staying at Home - regrets quitting and hopes (plans) to return to work within next 2-3 years.

A. Satisfied with Housewife-Mother Role - essentially no regret at quitting work, feels fulfilled as a mother and wife, enjoys creativity of infant's daily growth and actions, feels irreplaceable at and in home, gains satisfaction from family inter-relationships.

B. Frustrated, Resentful of Staying at Home - regrets quitting and hopes (plans) to return to work within next 2-3 years, finds housewife's tasks boring and not important, regrets loss of freedom and feels tied down.

FOR ALL MOTHERS:

1. How does your husband (or family) feel about your working (or going to school)?
2. Do you usually follow what he (or they) suggest or do you make up your own mind?
3. How much does the baby's father (or your husband) help out in caring for the baby? (Record details, probe for specific examples if necessary). Does he enjoy being with the baby?

4. Are you happy about the way the baby's father is with the baby? (The way he interacts?) Do you wish he'd behave differently? (Does mother seem satisfied with father's behavior toward baby?)
5. Does your baby like being cared for by his father? Why?

H. Father Participation
Satisfaction with Father Involvement

1. Does ________'s father react to him as you anticipated he would?
    a. How does he react to the new baby? Interact with the new baby? (PROBE: Is he more helpful than you thought; less helpful; about the same).
    b. Is there anything he will not do for the baby?
    c. Have you noticed any changes in the father's behavior over the past three months relating to the baby?
2. Sometimes having a baby can occupy much of a mother's time and leave only limited time for the husband-wife interaction. How do you feel about this? (PROBE: Husband's jealousy regarding baby.)
    a. Has the baby left you with less time for your husband?
    b. Has the baby brought you and your husband closer together? How? (PROBE: Androgynous life style; role-sharing of caretaking responsibilities.)

I. Father Absence

1. I understand that you are not living with the baby's father. Do you think you have had special problems because _____ (baby's) father is not living here with you? In other words, do you think your problems are different from those of someone who is living with her baby's father?
2. What types of problems have you faced because you are not living with the baby's father? (PROBE: whether mother misses father because of her own needs or because of effects on child, e.g., does she miss having someone to discuss problems with - like whether to take baby to doctor, buy new toys, etc. - provide financial aid, etc.? or does she feel baby needs male attention, "fathering," etc. - like more active, aggressive play? or both?
3. Any other concerns because of this?
4. Is there someone taking the father's place? Who? (E.G., friend or relative who visits regularly?) (PROBE: mother's satisfaction with "father substitute" and why.)
5. Does mother feel that there will be any change in the father-absent situation in the near future (i.e., does she perceive father absence as temporary or permanent)?
6. When did father absence begin (before pregnancy, during pregnancy, after baby's birth)?

Record in detailed narrative form (behavioral terms):
1. Mother behavior in testing situation.
2. Mother playing with infant.
3. Baby's response to stranger.
4. Baby separation from mother.
5. Mother in changing and caretaking.
6. Mother comforting.

Note circumstances of home visit and brief description of home environment.

HOME COMPOSITION

For father absent* homes:

*father absence = father not there on regular basis - e.g., does not keep clothes there, does not occupy room, does not spend at least 4/7 nights a week, etc.

Mother lives* with:

*lives = on regular basis - e.g., has room, keeps clothes there, spends 4/7 nights a week

her parent(s) - mother ________
father ________
both ________

her grandparent(s) - grandmother ________
grandfather ________
both ________

other relatives - uncle ________
aunt ________
both ________
cousin(s) ________ male ________ (approximate age)
female ______ (approximate age)

No. Age

______ ______ her brother(s) - (number and approximate age)
______ ______ her sister(s) - (number and approximate age)
______ ______ friend(s) - male ______ (specify number and approximate age)
______ ______ " female ______ (specify number and approximate age)

______ ______ with study baby siblings
______ alone with child (study baby)

Unusual Circumstances (e.g., temporary residence, future plans, etc.):

ALTERNATIVE APPROACHES TO INFANT CARE
9-MONTH INTERVIEW
JULY 1974

A. Topic: Infant's Development and Preferences

Moss #12
Accept-Reject

1. What are the major changes in __________'s behavior since I last saw him/her?
   PROBE: Greater independence
   Increased mobility
   Exploratory-curiosity
   Greater attachment to M

2. Which of these new behaviors do you enjoy most?

3. Any new behavior that you dislike or regret? Which cause you more trouble? Do you feel he's/she's less dependent on you? Will you like it as your baby grows less dependent?

4. Does he/she take up more of your time now than before? In what ways?

5. Does the baby still like to be rocked, held, cuddled, and touched? Soothed by these? (Physical Contact) (PROBE for preferences.)

6. Does the baby enjoy being talked to or sung to? Played with? (Social Interaction) How do you play with baby?

Sensit.

7. What are his favorite activities? How does he let you know when he does not like something or is dissatisfied? (PROBE for M recognition of subtle cues.)

Coop. vs.
Interfere

8. What happens if you two disagree -- he wants to do something that you'd rather he wouldn't do?

   When do you have to say "no"? Do you discipline __________ often? When? Have you had trouble setting limits? (PROBE for specific examples.)

9. What sort of things does the baby seem to enjoy the most? Is there anything in particular that interests him - holds his attention? Does baby entertain self?

   What are his favorite toys?

10. Is there one toy or object that __________ definitely prefers to have near at all times?

Coop.-
Interfere

11. How do you feel about his/her strong attachment to this object? Do you think it's bad or good? (If not good then) .... what are you going to do about it?

Coop.-Interfere 12. Has _________ acquired any troublesom habits (pacifier, daily schedule, etc.)? How do you (are you going to) handle that?

13. (Do you forsee) any difficulty in weaning from bottle?

14. Any trouble starting solids? I's favorite foods? How do you get him to eat things he dislikes?

B. Topic: Daily Schedule

Coop.-Interfere 1. Do you have a fairly stable daily schedule? Is __________ difficult to get on a schedule? How so?

Sensit. Access. 2 When and where does __________ take his/her nap? How do you know when __________ wakes up?

Access. (Note: physical arrangement; is I always where M can see or hear?)

Access. 3. In a typical day, do you arrange periods of time that you have for yourself -- to do what you want to do?

(Note: what arrangements are made for Iat these times?)

4. What places do you go to that you can take ________ along?

Checklist:	How Often:
Shopping ____________	________________
Pool ______________	________________
Church ____________	________________
Social Outings _____	________________
____________	________________
____________	________________
____________	________________

5. How do you keep track of _______ when you're really busy around the house? (Example: trying to fix dinner.) When you're in another room and out of sight is _______ comforted by your voice? (Ask for an example.)

(Note: physical arrangement to accommodate I exploration -- "baby proof"? gates on stairways, etc.)

Access.- Sensit. 6. When do you use (name of equipment)? Why then? (Note: for her convenience and/or infant enjoyment.)

How about use of playpen, automatic swing, infant seat, TV, radio, records ....?

C. Topic: Father Involvement

1. How much does the baby's father (or your husband) help out in caring for the baby? (Record details, probe for specific examples if necessary.) Does he enjoy being with the baby?

2. Have you noticed any changes in the father's behavior over the past three months relating to the baby?

3. Are you happy about the way the baby's father is with the baby? (The way he interacts?) Do you wish he'd behave differently? (Does mother seem satisfied with father's behavior toward baby?)

Does your baby like being cared for by his father? Why? Does I act differently?

COMPLETE IF M HAS RETURNED TO WORK SINCE PHASE III VISIT

Career: FOR CURRENTLY WORKING MOTHERS: Have you returned to work? When?

1. Women have different reasons for working after marriage and the birth of a baby. (If necessary say, "Some work because they like to or want a career, some work because it helps to get extra things for the family, and some because the family needs money for necessities. How about you?") Did you return to the same job you had previously?

2. Has your job (conditions, etc.) changed any since you went back to work? (If returned to same job.) How?

Do you like it better or worse now?

3. How do you feel about being away from your baby during the day? Do you enjoy being at work or resent it?

4. Do you plan to continue working? Any plans to quit? If so, when? Why?

CATEGORIES FOR SCORING WORKING MOTHERS

I. Financial Reasons
______ A. Family income needs (necessity).
______ B. Acquire "extras" for family.

II. Non-financial Reasons
______ A. Need for accomplishment.
______ B. Need to occupy time or meet people.

III. Combination

I. Financial Reasons

A. Family income needs (necessity) - includes working because we have to have the money to get along, chronic financial need, husband is unemployed or works only part-time at low paying type job - the family needs money.

B. Acquire "extras" for family - includes working to buy a car for me (second car), nicer things for us, an education for my child - to buy something.

II. Non-financial Reasons

A. Accomplishment - includes working to feel independent, to do something important, because enjoy the job, because like to work, because feel person should if have education to do so (especially special training (nursing, etc.).)

B. Occupy Time or Meet People - includes working to buy things but also to be with adults or friends of same age.

III. Combination
Financial and Non-financial Reasons - includes working to buy things but also enjoy using education, etc.. frequently may occur as combining of "acquiring extras" and "accomplishment" from financial and non-financial reasons.

FOR CURRENTLY WORKING MOTHERS

1. What type of arrangements are you currently using for child care?
   ______ a. Relative (who)______________ age______________
   ______ b. Babysitter ______________ age________ other ch.______
   ______ c. Day Care (name of center)______________________________
   ______ d. Group care______________ (cares for ______ other children)

2. Location of child care
   ______ a. Child caretaker lives in
   ______ b. Comes into home (number of hours per week?)____________
   ______ c. Child goes out
   ______ d. Other ______________________________________
   (please be specific)

3. How satisfied are you with your current child care arrangements?
   ______ a. Highly satisfied
   ______ b. Satisfied
   ______ c. Slightly dissatisfied
   ______ d. Dissatisfied
   ______ e. Concerned

   Why?

4. Are you considering changing your child care arrangements?
   ______ a. Yes (reason)______________________________________

______ b. Undecided (reason) ______________________________
______ c. No (reason) ______________________________

5. Have you changed your child care arrangements?
______ a. No
______ b. Once
______ c. Twice
______ d. More (number of times ______)

6. How did you locate your child caretaking facilities?
______ a. Used before to care for other child
______ b. Suggested by relative
______ c. Suggested by friends
______ d. Saw an advertisement
______ e. Convenient circumstances
______ f. Other ______________________________
(please be specific)

7. Was locating adequate child care for your infant a problem?
______ a. No
______ b. Yes (why) ______________________________
(please be specific)

8. Do you provide the following for your child while being cared for by others?
______ a. Food
______ b. Diapers
______ c. Change of clothing
______ d. Equipment (crib, etc.)
______ e. Toys
______ f. Others ______________________________
(please be specific)

9. Did the child care facilities adjust their schedule for your infant, or had they a set schedule previously in operation?
______ a. Followed his/her home schedule (flexible to your needs)
______ b. Has a previously established schedule
______ c. Not familiar with the schedule at the child care facility
______ d. Other ______________________________
(please be specific)

10. How do you pay or compensate for child care?
______ a. No payment required
______ b. Payment is in goods or services (what) ______________
______ c. Pay by the hour (amount) ______________________
______ d. Pay by the week (amount) ______________________
______ e. Pay by the month (amount) ______________________
______ f. Yourself or other/welfare/ADC

11. How much time does your child spend being cared for by others while you work?
______ a. ______ hours per day
______ b. ______ hours per week, or
______ c. ______ day per week, or
______ d. ______ hours per month

FOR NON-WORKING MOTHERS

Please answer these questions as if you were to want to or need to return to work. Pick your first choice.

1. I would attempt to work:
   ______ a. Part-time
   ______ b. Full-time
   ______ c. At home
   ______ d. Other ______________________________________
   (please be specific)

2. I would prefer the following child care arrangements:
   ______ a. Relative (who) ____________________ age __________
   ______ b. Babysitter ____________ age __________ other children ____________________
   ______ c. Day Care (name of center) ____________________
   ______ d. Group care ____________ (cares for ______ other children)

3. Location of child care
   ______ a. Child caretaker lives in
   ______ b. Comes into home (number of hours per week?)
   ______ c. Child goes out
   ______ d. Other ______________________________________
   (please be specific)

4. How would you go about locating child care facilities?
   ______ a. Someone used before to care for other child
   ______ b. Suggestion of relative
   ______ c. Suggestion of friends
   ______ d. Saw an advertisement
   ______ e. Other ______________________________________
   (please be specific)

5. Do you think that finding adequate child care would be a problem?

D. Topic: Separation and Non-maternal Care

1. (If applicable) When did you first leave your baby with someone else?

2. Longest time you've been away? (If extended, ask, Did I behave differently toward you when you returned?)

3. Does your baby show any signs of being upset when you leave? Why do you think this happens? Does he act differently toward you when you return? Why? (Record detailed behavioral description.)

Ask Working Mothers

4. Does he/she "like" the sitter or center? Have you noticed any changes in I's behavior since you returned to work that you attribut to his being cared for by someone else. (Note: any subtle changes such as loss of appetite, change in sleeping habits, fussiness.)

5. Generally, how do you feel about leaving __________ with someone else? Do you worry? What are your main concerns?

Moss M know of D.C. Envir. 6. Inquire about details of caretaker (qualifications) and environment -- such as, appropriate toys, social stimulation, cleanliness, infant/caretaker ratio,...

Discrim. Bet. Caregivers Moss #22 7. Does ____________ show strong preferences for certain people? Are there some things that he'd/she'd rather have you do with him than his/her father or babysitter? How does he/she let you know this? (Is M aware of subtle cues and signals?)

E. Topic: Mothering

Moss #24 1. Now that you've been a mother (for 9 months OR for quite some time) can you imagine feeling self-fulfilled (happy OR satisfied) if you were not a mother?

Moss #3 2. What has happened since you had ________ that caused you to worry or experience anxiety. (If no response suggest an illness in the family or other possible stresses -- perhaps just an air conditioner break-down.) Did you find it difficult then to be as effective in your work as you usually are?

3. You are aware by now that babies are pretty demanding creatures who need attention a great deal of the time; feeding, changing, comforting, etc. It's not always easy to get used to these demands, to being "on call" 24 hours a day. How have you found this to be for you, especially since __________ is now more active?

4. All mothers enjoy certain aspects of caring for a baby more than others. What have you enjoyed the most? What has not been as much fun for you?

Moss #25 5. Do you ever think that you would enjoy motherhood more if only your baby were a little different in some ways? (For example, if __________ enjoyed cuddling more OR if _________ were a little more active? Use examples that reflect any concerns that M may have mentioned.)

HOME COMPOSITION

Indicate home composition and ages for all persons living in the home. See note below for definition of "living in the home".

Baby's Mother ______________________________ age ____________________

Baby's Father ______________________________ age ____________________

Siblings:

Brothers ______________________________ ages ____________________

Sisters ______________________________ ages ____________________

Other Relatives: Indicate relationship:

____________________ Age ____________________

____________________ Age ____________________

____________________ Age ____________________

____________________ Age ____________________

____________________ Age ____________________

____________________ Age ____________________

Others:

____________________ Age ____________________

____________________ Age ____________________

____________________ Age ____________________

____________________ Age ____________________

*"Living in the home" = on a regular basis, e.g., has a room, keeps clothes there, spends 4/7 nights a week.

Note: Indicate if living arrangement is temporary or transient for any of the above, if applicable.

Infant health - note if unusual:

Home environment - if changed:

INTERVIEW-BASED VARIABLES
SCORING MANUAL

*1. Hospital Stay as a Satisfying Experience

This variable rates the overall well being, pleasure, and satisfaction that S has experienced during her hospital stay.

1 - S found hospital stay a totally unsatisfying experience. Will be glad when it's over and does not look forward to further hospitalization.

5 - S has experienced moderate or intermittent pleasure. Overall it was a fairly enjoyable experience.

9 - S thoroughly enjoys her hospital stay and will miss it. She expresses no discontent.

*2. Paternal Involvement

This variable assesses the extent to which Father is invested in caring for his infant and assisting with domestic tasks. Evidence for such feelings will be seen in the orientation of protecting and comforting his baby, etc., or Father may avoid the domestic role and nurturant interactions with his infant.

1 - Father is extremely non-nurturant. Prefers little for domestic tasks. Prefers others care for infant and other demands have priority.

5 - Father can nurture on occasions but it is not his major style of life. S describes moderate nurturant behaviors regarding father.

9 - Father is highly nurturant. The aspects of being a father that appeal most are being needed by and being able to give to his child. He structured his life this way even if his own wishes are submerged.

*3. Maternal Anticipation

This variable assesses the positive orientation S expresses regarding experience and preparation for new infant.

1 - S expresses virtually no experiences which would indicate prior preparation or anticipation for the new infant.

*Variable description and scoring guidelines developed by H. Moss (Note 12) except for those indicated by (*) that were developed by the Project Director, E. Hock, for use in this study.

5 - S expresses anticipation to a moderate degree indicating some preparation. (May have read books or attended classes before the birth of previous babies.)

9 - S expresses great anticipation. Attended classes, read, and prepared siblings for birth of infant.

*4. Paternal Interest

This variable assesses the degree to which the husband was attentive, considerate, tender, and solicitous toward S during the pregnancy.

1 - S the husband was indifferent, insensitive and demanding. He expected S to carry on as usual and did not help with heavy housework, lifting of objects, carrying in groceries, etc. He was intolerant of any sensitivity or discomfort by S.

5 - S husband was moderately helpful, considerate and nurturant toward S during pregnancy.

9 - S husband was highly solicitous and thoughtful. He frequently asked S how she felt and made every effort to reduce strenuous physical activity on her part and continuously sought to keep S comfortable and happy.

5. Experience Caring for Infant

This variable assesses the amount of positive experience S has had caring for younger sibs, babysitting, and having contact with the infants of relatives and friends. Greater weight is given to caretaking activities than simply being in the presence of infants. Emphasis also is given feeding, bathing, dressing and diapering infants over the early months of life and seeking and getting enjoyment from these activities.

1 - S has had virtually no experience caring for infants with perhaps the exception of having held infants a few times.

5 - S some intermittent experience caring for infants. May have done some babysitting with little involvement in the care of the infants. May have had some responsibility caring for a younger sib.

9 - S has had extensive experience caring for infants. Baby sat or cared for younger sibs with much responsibility. Has enjoyed this activity and seeks it out.

6. Dependence

This variable assesses the degree to which S seeks out and enjoys, or misses not having close supportive relationships with her husband, parents, obstetrician, and friends; that is, how much overt dependent behavior she exhibits and feels free to express. Conflict over dependency is not to be rated here. She may describe herself seeking such relationships with all available persons, dislike being without someone like this, look forward to being cared for during her pregnancy (or when ill) and look forward to the hospitalization and dislike the idea of being "on her own" with the baby; she may welcome help from her doctor, her husband and anticipate the help of another person when she is home with the baby. Conversely, she may describe herself as disliking "counting" on others, preferring to do things "on her own", she may work until the last months of her pregnancy, want to get "on her feet" as soon as possible since her style is to manage rather than being managed; she avoids dependent situations whenever possible.

1 - S expresses essentially no dependent behaviors and in fact prefers to avoid them.

5 - S may express moderate dependency behavior; she does not constantly seek it out but can enjoy it and permit it in at least some situations.

9 - S is highly dependent, must have an external figure to depend on and is unhappy and functions poorly without such a figure.

7. Positive Perception of Infant While in Hospital

This variable assesses the degree to which M's initial impression of her infant, from her hospital contacts was positive. She may have been pleased and gratified from these encounters. Conversely, she may have been disappointed and upset from the outset. Positive perceptions may be reflected in descriptions of I as beautiful, wonderful, perfect, responsive, content, more attractive than expected, etc.

1 - M responded with a strong negative perception initially.

5 - M may have been partially disappointed in the beginning, showed some negative perception but also at least a moderately positive perception.

9 - M had a strong positive perception from her first encounters.

*8. Feeding Plans

This variable assesses the orientation of feeding plans. Whether her choice was mother centered, child centered, or influenced by outside sources.

1 - S is self-centered. Reasons for feeding choice are for personal convenience or satisfaction.

5 - S is neutral. Reasons for feeding choice are weak or S may not have strong feelings one way or the other.

9 - S is extremely child centered. Feels choice is best under the circumstances for infant's health and social interaction.

*9. Attitude Toward Non-Maternal Care

This variable assesses specific concerns, their frequency and intensity, regarding non-maternal care of infant.

1 - S exhibits essentially no apprehension over someone else caring for her infant.

5 - S describes some concerns over non-maternal care but is not preoccupied with these concerns to any lasting extent.

9 - S is preoccupied with constant apprehension over non-maternal care. She stresses fears and is concerned for a specific kind of infant care.

10. Degree of Preference for Active, Responsive, and High "Drive Level" Child

This variable assesses the intensity of S's wishes to have an "active", "alert", "smart", "energetic", and vigorous infant. She may so strongly desire these qualities in her baby that she expresses concern about a baby whom she might perceive as lacking such qualities. Or she may not "care" about these and may even want a quiet, calm, and tranquil baby.

1 - S does not desire such a baby, expresses no interest in alertness, activity etc. and may even prefer a quiet inactive infant.

5 - S shows a moderate preference for such an infant but will not mind "any baby" who lacks them.

9 - S strongly and exclusively prefers an active, vigorous, infant and may even be bothered by the idea of a baby who is not this way.

11. Mother as a Source of Stimulation (Orientation)

This variable assesses the degree to which S feels it is important and plans to provide environmental stimulation for the infant. Included in this rating are indications that S enjoys and maintains high levels of stimulation for herself and has little intention of modulating high stimulation levels in the surroundings of the infant. Stimulation involves music, noise, vivid visual stimuli, bright light, mobiles, vestibular stimulation, etc.

1 - S plans to maintain low levels of stimulation in the presence of the infant--lights low, quiet--Interested in not doing anything that might arouse the infant. She herself prefers things to be subdued and restful.

5 - S plans moderate stimulation for the infant. Will modulate stimulation in terms of whether baby is sleeping or not.

9 - S feels that stimulation of infant is highly desireable, enjoys intense stimulation herself and plans to maintain considerable auditory, visual, and vestibular stimulation for the infant.

12. Apprehension over Health and Well-Being of Baby

This variable assesses specific concerns, their frequency and intensity, over the health and well-being of S's infant. S may describe fears of damage (deformation), of retardation, of feeding difficulties or general ill-health and she may describe anticipating many signals from the baby as indicating illness or unnamed distress.

1 - S exhibits essentially no apprehension over health and well-being of her infant.

5 - S describes some concerns such as described above, but is not preoccupied with them to any lasting extent.

9 - S is preoccupied with constant apprehension. She stresses these fears as a major concern that reassurance has not modified.

13. Degree of Interest in Affectionate Contact with the Baby

This variable assesses the amount of interest M exhibits in holding, cuddling, rocking (i.e., maintaining physical contact of an affectionate sort with her baby). Evidence for such interest might be seen in her effecting such contact with pleasure, wanting to breast feed to be closer, being disappointed if she could not breast feed because of losing this opportunity for contact, and being upset if she feels she has a "non-cuddly" baby. Conversely, she may have little interest in such contact and may even dislike it, preferring other modes of interaction that do not require contact.

1 - M displays essentially no interest in affectionate contact. She prefers the development of infant characteristics that preclude contact, such as "independence".

5 - M expresses moderate interest in affectionate contact, enjoys it, but it is not a critical aspect of her relationship to her baby.

9 - M desires a great deal of this contact, she views it as the major and most gratifying way of relating to infant.

14. Nurturance

This variable assesses the extent to which M is invested in caring for others, particularly infants and children, in domestic tasks (cooking, housekeeping, etc.). Evidence for such feelings will be seen in the orientation of giving to the newborn before he can "give back" to M, and protecting and comforting her baby, etc. Or M may avoid the domestic role of giving, (prefers activity and active children) and avoids nurturant interactions with her infant. The emphasis here is in nurturant behaviors as a style of life regardless of how much or even whether such acts are enjoyed.

1 - M is extremely non-nurturant, cares little for domestic tasks and may enjoy the attributes of her infant that don't involve caretaking. She prefers to be given to rather than giving. She makes frequent use of sitters and surrogate mothers in a context of avoidance. Other demands have primity over infant's needs.

5 - M can nurture on occasion though it is not her major style of life. She describes moderate nurturant behaviors with him.

9 - M is highly nurturant. The aspects of being a mother that most appeal to her are being needed by and being able to give in all ways to her child. She structures her life this way even if her own wishes are submerged.

15. Autonomy - Control in Relation to Infant

This variable assesses the extent to which S grants her infant autonomy, or expects to do so, as opposed to being restrictive, coercive and controlling with him. Evidence for coerciveness and control may be seen in S's concern about "spoiling" her infant, about feeding on schedule only, about not "letting him get away with things", and in general making sure that she runs his life and not vice-versa. Or she may not care about any of these issues, feeling that she should adapt to the baby's needs and demands rather than he to hers.

1 - S is highly controlling and expects I to adapt to her demands in all situations and circumstances.

5 - S intends to enforce moderate control over her infant but is also willing to "give" where this is appropriate.

9 - S does not expect her baby to conform to any schedules or controls enforced by her and grants him essentially total autonomy.

16. Confidence in Maternal Skills

This variable assesses the amount of confidence S has in her maternal skills; that is, how well she feels she can carry out the tasks of motherhood (need fulfillment, decision making, "understanding", etc.). Her sense of competence in other areas of her life is not to be rated here. She may approach her infant with self-assurance, feel certain that she can feed, change, hold, communicate and nurture, and she perceives motherhood as a series of tasks she will master without difficulty. On the other hand she may evidence minimal confidence in these skills, wonder how well she will do in any of them, feel pessimistic about being a "good" mother, etc.

1 - S has virtually no confidence in her maternal skills, belittles and minimizes herself in this regard.

5 - S has moderate confidence; in most tasks she feels she will do "as well as the next one" and in some she may doubt her competence. Overall she faces motherhood with reasonable expectations of adequacy.

9 - S is self-assured and confident about any and all tasks, known and unknown, relating to motherhood, evidencing no doubts about any aspects of her new role.

17. Maternal Investment

This variable assesses how important it is for S to be a mother, that is, what place this role plays in her value system or her life.

1 - S being a mother is of relatively no importance to S.

5 - S expresses moderate investment. It is important to her to be a mother but other aspects of her life are also important (work, recreation, etc.).

9 - S being a mother is extremely important to S. She feels it is her major way of fulfillment in life. She cannot conceive of not being a mother.

18. Positive Attitudes Towards Maternal Role

This variable assesses the positive orientations M expresses towards her role as a mother. She may find pleasure in all aspects of mothering, the pleasureable and not so pleasureable (i.e., diapering, night feeding, etc.); to be a mother means to be fulfilled and is faced essentially without conflict or regret. Conversely, M may express intense negativism towards being a mother, annoyance with the baby's demands, regret at what she loses in "freedom" etc., and wonder whether it is "worth it." She also may describe herself as someone who doesn't like children or whom children don't like.

1 - M expresses virtually no positive feelings towards the maternal role. (Feels trapped, tied down.)

5 - M expresses a moderate amount of positive orientation but also gives evidence for conflict and negativism. Her feelings are mixed but overall she is quite satisfied with many aspects of motherhood.

9 - M expresses strong and exclusively positive feelings towards motherhood and experiences all of its demands with pleasure.

*19. Career Orientation

This variable assesses the amount of interest the subject expresses in a career, job, or occupation for herself. Such interest may be based on financial reasoning or personal growth.

1 - S displays essentially no career orientation nor does she plan for such in her future life.

5 - S is moderately career oriented but views other aspects of her life as more important at this time.

9 - S is highly career oriented and views this orientation as a gratifying or necessary experience.

*20. Career History

This variable assesses maternal attitudes about the career choices or prominent women in her childhood, particularly her mother. Concern is with feelings, stemming from her own childhood experiences, about her own mother having interests other than home and family.

1 - S expresses resentment that her own mother had outside interests or worked; felt that this was bad for herself or her siblings. May hint that mother selfishly neglected the family.

5 - S expresses no clear resentment or disappointment in her mother's outside interests but neither does she suggest that she was pleased that her mother had sources of interest outside of husband and children.

9 - S expresses understanding of her mother's unique needs prerequisite to her mother's happiness and self-fulfillment. May comment that her mother was such an interesting person because of her hobbies or career. Generally speaking, not at all resentful that her mother had outside interests, but proud of the fact.

*21. External Control

This variable attempts to assess the extent to which S's maternal responses will be contingent upon other's opinions.

1 - S demonstrates low external control. S is independent and has made her own decisions regardless of others.

5 - S demonstrates moderate external control considering the advice and counsel of others in a flexible and compromising way.

9 - S is highly dependent. Must have an external figure to depend on and is unhappy and functions poorly without such a figure.

22. Mother as a Source of Stimulation (Voice)

This variable assesses the stimulus qualities of S's voice; that is, the intensity, overall modulation and spontaneity of her voice during the interview. She may speak with animation, modulation tone and intensity to content or conversely she may retain a fixed quality (which may be either flat and unchanging or highly animated but also unchanging). Hence, it is the capacity to alter and adapt the voice that is being rated.

1 - S's voice has a fixed, unspontaneous, quality that does not shift in intensity; or she has an animated voice that remains equally fixed throughout the interview.

5 - S's voice is moderately spontaneous and labile, and varies in intensity and qualities of modulation at least part of the time while it may on occasion be non-modulated and flat. Overall she adapts these qualities of voice to the content of the material.

9 - S's voice is highly and continuously spontaneous, modulated and adapts to all subjects and moods.

23. Degree of Depression Following Pregnancy

This variable rates both the frequency and intensity with which M has experienced overt depression since her pregnancy. Both expressions of such feelings and the interviewer's impressions at the time of the interview are to be considered in the final rating. M may demonstrate a depressed mood, psychomotor retardation, etc., and describe more or less constant feelings of sadness or discouragement, crying spells, etc. A strong clinical impression to support it, still merits a high rating. She may, on the other hand, have experienced essentially no depressive feelings and appear clinically non-depressed. Sleep disturbances, and lack of energy are not to be rated in.

1 - M has been essentially free of depression throughout her post-partum period and does not appear clinically depressed.

5 - M may report a moderate amount of intermittent depression, crying spells, etc., but such feelings never persisted for more than a day or so. She does not appear particularly depressed though she may appear to feel this way on occasion during the interview.

9 - M reports more or less continuous depression or periods of severe depression during her post-partum period which she was rarely or never free from. She may give no report of such feelings but appear chronically and severely depressed and describe this time as colored by this mood. She may even cry openly during the interview.

24. Proneness to Disorganization under Stresses of Maternal Experiences

This variable assesses the extent to which M's functioning and well-being tend to be disrupted by stress of various kinds (including childbirth and hospitalization, and motherhood). She may be the kind of person who is easily thrown off by anxieties of all sorts, physical illness in herself or others (parents, husband, infant), changes in her usual schedule, circumstances that differ from her expectations (such as the kind of baby she gets vs. what she wants) etc. Conversely, she may be highly adaptive, maintaining equanimity and optimal functioning in all situations at all times; she is flexible enough to manage major or minor crises without impairment of her state of mind and effectiveness.

1 - M is highly adaptive and flexible person who is unperturbed by stresses of all kinds and intensities.

5 - M is moderately adaptive and on occasion may become disorganized by significant stresses past or anticipated, but much disorganization is not persistent or terribly severe and she continues to function with reasonable effectiveness.

9 - M is highly sensitive to stresses of all kinds, she is easily disorganized and her well-being and functioning may remain impaired long after a stressful situation has ceased.

25. Degree of Preference for Early Infancy

This variable assesses the preference M expresses for the passivity and helplessness of early infancy (the first six weeks) versus the active, exploratory and interactional qualities of an older infant or child. M may express a distinct preference for the newborn infant, the middle months of the first year or the latter months when her baby is most active and social or she may actively dislike the early months complaining that the child "vegetates" and isn't a person until later on.

1 - M prefers emphatically the older child, the more responsive phases, and may even exhibit aversion to the early months.

5 - M does not exhibit a strong perference for early or late months and may prefer or dislike both periods (phases) about equally.

9 - M strongly prefers the early months of passivity and helplessness to the later stages of the first year towards which she may show some dislike (though not necessarily).

26. Perception of Infant as Active, Responsive and High "Drive Level" Child

This variable assesses the extent to which M actually perceives her infant as active, alert, "smart," responsive, vigorous, etc., or conversely as "slow," unresponsive, inactive, etc.

1 - M sees her infant as having essentially none of these qualities.

5 - M views her infant as at least moderately alert, active, smart, responsive, etc.

9 - M feels her infant is extremely responsive, alert, etc. all of the time.

27. Degree of Aversion to Fussy or Irritable Baby

This variable assesses the extent to which M is upset, "nervous", angry or unhappy if she has a baby who cries and fusses inordinately. She may not be at all bothered by such behavior, tell of instances where her infant's crying didn't bother her or she may, on the other hand, actively and intensely dislike this behavior and worry if her baby is this way. If M stresses the nurturant responses (disliking to see infant unhappy or uncomfortable) to crying she merits a lower rating since she indicates that the cry itself is not aversive. Dysphoric responses to the cry (grating, piercing) as a noxious stimulus are to receive major emphasis.

1 - M is not upset at the idea of excessively fussy behavior in her baby, and may report such irritability with no distress at all.

5 - M expresses some dislike or worry at such behavior but still can integrate it into an acceptable picture of her baby.

9 - M expresses intense concern or dislike for such behavior in her baby, and finds it hard to conceive of what she should do or how she should act when confronted with fussiness in her infant.

28. Perception of Baby as Irritable or Fussy

This variable assesses the extent to which M views infant as fussy or irritable.

1 - M views infant as calm, quiet, does not feel he is a fussy infant. Infant cries less than she expected.

5 - M views infant as moderately fussy, as "about like all babies" in this regard, sees him as fussy at times, not so at others.

9 - M views infant as inordinately fussy, and irritable all of the time. Infant cries far more than she expected.

29. Degree to Which Baby is Regarded as Demanding

This variable rates the degree to which M, over the first three months of life, perceives infant as demanding of her. She may feel that he was not excessively demanding, that he required less attention than she expected; she may describe him as "easy" or "good," content to be alone, adaptable to her needs, etc. Or she may feel that infant is extremely demanding because he cries so much; or is awake so much, feeds too often, needs to be held too much and is rarely content being alone.

1 - M views infant as undemanding all or most of the time.

5 - M views infant as moderately demanding; at times he may demand a lot but overall she does not feel these demands are excessive.

9 - M views infant as persistently and excessively demanding.

30. Degree to Which Baby Enjoys or is Quieted by Physical Contact

This variable rates the degree to which M perceives and describes her infant as enjoying or is calmed by holding, rocking, cuddling, caressing, etc. She may feel that he is highly responsive to these behaviors, quiets immediately when held, falls asleep in her arms, seems content when held or rocked. Conversely, she may describe infant as not being calmed by contact or as needing to be put down in order to quiet down, as not enjoying being held, as squirming or fussing when restrained, etc. Maternal activities in the service of relieving boredom (as holding infant so he can look about) as opposed to close physical contact may contribute to lower rating.

1 - M describes infant as unresponsive to and/or disliking physical contact.

5 - M describes infant as immediately responsive to physical contact; at times he may not enjoy or be calmed by it but for the most part such contact is effective and enjoyed.

9 - M describes infant as highly responsive to physical contact at all times and as enjoying close contact, cuddling, etc.

31. Degree to Which Baby Enjoys or is Quieted by Social Interaction (Being Talked to, Singing to, Played with or Looked at)

This variable rates the degree to which M perceives infant as enjoying social interchanges with herself and others. She may mention how outgoing and friendly he seems, how easily he smiles and vocalizes, how much he seems to enjoy being entertained by people rather than being alone.

1 - M describes little or no enjoyment of social interacting by infant.

5 - M describes infant as enjoying such interaction at least to a moderate degree.

9 - M describes infant as highly responsive to social interaction and stresses these qualities as primary.

32. Degree of Maternal Interest in Social Interaction with Infant

This variable rates the degree to which M is invested in and enjoys social interchange, as specified in the preceding variable, with infant.

1 - M reports little or no interest in social interaction with infant.

5 - M reports at least some interest in such interaction with infant.

9 - M reports consistent and sharp interest in social interaction with infant as of primary importance to her.

33. Degree to Which Infant Enjoys or is Quieted by Visual Stimulation

This variable rates the degree to which visual stimulation, being looked at, having visual toys such as mobiles, being held up to see objects in the environment, etc., are enjoyed by or quiet infant if he seems upset or fussy.

1 - M describes such stimulation as not effective in quieting infant and not of particular enjoyment to him. Infant looks about little, seems disinterested in visually taking in his world.

5 - M describes infant as enjoying visual stimulation and that it can quiet him at least on some occasions.

9 - M describes infant as a visually curious baby, as always having to see, preferring this to physical contact; such stimulation is highly effective in quieting him.

34. Degree that Baby is Seen in Positive Sense

This variable assesses the extent to which M currently views her baby as gratifying, pleasant and non-burdensome. She may focus on the demanding, fussy, or unattractive aspects of the child, tending to see him (describing him as "it" may suggest a negative perception) less as someone to enjoy nurturing and more as an impersonal source of endless and unpleasant obligations. Conversely, she may stress the warmer, more personal and rewarding aspects of the baby and view these qualities as primary. Emphasis here is on the total perception ever since returning home from the hospital.

1 - M views her baby as a fussy, dirty, insatiable, bothersome and unappealing source of hard and unrewarding work. Giving unenthusiastic lip service to the more positive aspects while stressing the negative ones would merit a low score, as would overt feelings of disgust.

5 - M realistically acknowledges some aspects of the baby as negative and unrewarding, and may express fairly intense feelings in this direction. At the same time she is aware of the pleasanter sides of the child, does express enthusiasm for them, and does not feel that they are incidental or cancelled out by the negative.

9 - M experiences her baby as a source of pleasure. She acknowledges and is not bothered by the negative, indeed she can see "fun" in it and integrates all aspects of the baby and his care into a fulfilling, meaningful and enjoyable experience.

35. The Degree to Which M Feels Her Baby is Positively Attached to Her

This variable rates the extent to which M views infant as knowing and recognizing her as being comforted most effectively by her, as missing her when she is away, and as loving her through his behaviors in her presence; i.e., smiling and cooing more at her, following her with his eyes, showing pleasure to her voice, etc. and as wanting her to hold him as opposed to others.

1 - M describes little or no perception of infant as positively attached to her and may be uncertain as to whether infant recognizes her.

5 - M describes infant as showing some positive attachment to her.

9 - M describes infant as strongly and positively attached to her and her ways of acting with him.

36. Degree to Which Infant Characteristics Increased or Decreased Pleasure and Investment in the Maternal Role

This variable assesses the extent to which M's investment and pleasure in being a mother have been influenced by infant's characteristics. That is, to what extent her pleasure and investment have been changed by specific behaviors in infant rather than the experience of having a baby regardless of his characteristics. She may have experienced little change in her initial feelings of pleasure and investment whether they were high or low. Or, conversely, she may feel that she has had far more or less pleasure than she expected because of infant's behaviors. And she may now be far more highly invested in being a mother (decide not to return to work and want more children sooner, etc.) than she was; or she may now feel that being a mother is not what she wants, decide to return to work earlier, want no more children, etc. and attribute her attitudes to infant's behaviors.

1 - M's pleasure and investment in the maternal role have been essentially influenced by infant's characteristics.

5 - M's pleasure and investment have been considerably influenced by infant's characteristics.

9 - M's pleasure and investment have been influenced in a major way by infant's characteristics.

37. Degree to Which M Takes It as a Personal Affront or Sign of Rejection When Her Infant is Discontent, Inconsolable or is Unresponsive to Maternal Contact or Care

This variable rates the degree to which M takes personally behaviors in infant that can be interpreted as rejecting or hostile, i.e., fussing and crying, not responsive to physical contact and other forms of stimulation or caretaking. She ma feel, for example, that infant dislikes her or doesn't want her if he is unresponsive to crying, won't smile when she wants it, cries without stopping despite her care, etc.. She may be highly sensitive to infant's responsiveness to others as opposed to herself.

1 - M takes none of these behaviors in a personal way.

5 - M may occasionally take such bahaviors personally when under stress but for the most part is not prone to show interpretations.

9 - M takes most of these behaviors as affronts and rejections and has little capacity to view them other than in this way.

*38. Separation Stress

This variable rates mother's anxiety and possibly feelings of guilt at leaving her baby. Separation from infant may be a stressful situation which mother dreads and worries about. She may not enjoy her time away from the infant due to her concern.

1 - Mother dreads separation from infant. She usually worries constantly while away and is eager to return. Separation is highly stressful.

5 - M may experience some discomfort upon leaving infant. She is concerned about infant's well-being in her absence but is able to enjoy her life away from the infant -- she is not absorbed in worry. M may regret having to be away from baby often but does not express strong guilt feelings.

9 - M expresses no anxiety at leaving infant. She may, when absent from the baby at one time or another, have been worried but generally speaking she is not worried or stressed. She expresses no regret at having to be away from her infant.

*39. Perception of Infant's Distress at Separation

This variable assesses mother's PERCEPTION of infant's response to being separated from her. Her interpretation of cause of infant's behavior is evaluated.

1 - M believes that as a result of separation from her the infant becomes greatly distressed. He may exhibit this distress by crying when she leaves or he may behave in an unusual manner when reunited with her. She may feel that the infant is angry with her for leaving him.

5 - M recognizes infant distress or discomfort as a result of separation. To a limited extent she believes that infant "misses" her or that his distress may in part be due to her absence.

9 - M may be cognizant of some infant distress as a result of separation but generally attributes this to a change in situational variables or daily routine. Or M may perceive no infant distress.

*40. Satisfaction with Father Involvement

This variable assesses the mother's satisfaction with the way the baby's father (or her husband) interacts with the baby. The father may be highly involved or pay little attention to the infant - only the mother's attitude about the behavior is evaluated. Does she perceive the father-infant relationship as good.

1 - M is dissatisfied with paternal involvement. She may feel that father is too rough, not sensitive to infant needs, or simply that he is disinterested. He may even "spoil" the baby. In any case, M expresses discontent with the father's behavior.

5 - M is generally satisfied with father's behavior. She may have some reservations about one or two facets of his behavior (she might wish he'd engage in more caretaking or that he'd be

less rough) but generally she has few complaints.

9 - M is greatly pleased with father's behavior. Generally, whatever he does (or does not do) with the baby is good in her eyes.

*41. Degree to Which Baby Discriminates Between Caregivers

1 - I has definate preferences for specific individuals to do all or specific tasks. For example, wants M for cuddling at feeding or bedtime but prefers father for playtime. May prefer M rather than babysitter for somethings. May "reject" some caregivers completely.

5 - I occasionally shows definate preferences.

9 - I rarely if ever seems to show preferences for or dislikes of a particular caregiver. I's behavior is usually more determined by his mood or the particular task as opposed to who the caregiver is.

*42. Degree of I Attachment to Objects

1 - I is strongly attached to a specific object as evidenced by frequent, consistently exhibited distress at parting with the object and desiring proximity to it.

5 - Sometimes I desires a specific object, i.e., at bedtime likes to cuddle a specific toy but relinquishes object without much distress.

9 - Shows no attachment to a limited number of specific objects.

*43. M Knowledge of Non-Maternal Care

1 - Well-Informed: knows such things as infant/caretaker ratio; number of infants cared for at any one time; details about activities and I's opportunities for social interaction; physical environment factors -- cleanliness; typical sound level (radio and TV on); baby's schedule; arrangements for medical emergency care; background of personnel (-- if private has sought references). Has made a concerted effort to be well-informed of every detail that would effect I's well-being.

5 - Informed: is aware of essentials, perhaps because others informed her but in contrast to "well-informed" has not devoted the energy to personally check out the situation.

9 - Uninformed: is relatively unaware and perhaps unconcerned about details of I's activities. May just assume that sitter or center is providing appropriate care.

Appendix B

Recording Forms for

Time Sampled Behavioral Observations at 3 and 8 Months Infant Age

LIQUID FEEDING/3 MONTHS INFANT AGE

	min.						min.						min.					
I BEH.	0	10	20	30	40	50	0	10	20	30	40	50	0	10	20	30	40	50
Not attached																		
Attached: No suck. (or sporadic)																		
Voc.																		
Smile																		
Gag/Spit up																		
Hiccough																		
B.M.																		
Startle																		
Arm & Leg Thrusts																		

	min.						min.						min.					
M BEH.	0	10	20	30	40	50	0	10	20	30	40	50	0	10	20	30	40	50
Voc. to I																		
Smile to I																		
Look to I's face																		
Touch I's mouth																		
Touch I's cheek-chin																		
Pat																		
Caress																		
Move I (shift position)																		
Rock																		

	min.						min.						min.					
I STATE	0	10	20	30	40	50	0	10	20	30	40	50	0	10	20	30	40	50
Alert (eyes open)																		
Drowse																		
"Sleep" (eyes closed)																		
Fuss																		
Cry																		

	min.						min.						min.					
POSITION	0	10	20	30	40	50	0	10	20	30	40	50	0	10	20	30	40	50
I not in contact (not held by M)																		
Facilitate vis a vis																		
Bottle propped																		
Prone																		
Supine																		
Up																		

	min.						min.						min.					
FEEDING INPUTS	0	10	20	30	40	50	0	10	20	30	40	50	0	10	20	30	40	50
Milk																		
Water																		
Other ____________																		

	min.						min.						min.					
TIME OUT (Note length of time)		10	20	30	40	50	0	10	20	30	40	50	0	10	20	30	40	50
Burp																		
Prepare Food																		
Other____________																		

Indicate if cannot see by "X"

Hock OCD-CB-490

SPOON FEEDING/8 MONTHS INFANT AGE

	min.						min.						min.					
I BEH	0	10	20	30	40	50	0	10	20	30	40	50	0	10	20	30	40	50
Spoon Touches I Mouth																		
Happy-content voc. (coo, babble)																		
Smile																		
Watch M's face																		
Neg. voc.																		
Purposeful spit-out (happy)																		
Spit out (projectile, protest)																		
Cough-choke grimace, red face																		
Hic up																		
Spit up																		
Burp																		
Arm thrusts																		
Leg thrusts																		
Rocking																		

	min.						min.						min.					
M BEH	0	10	20	30	40	50	0	10	20	30	40	50	0	10	20	30	40	50
Pos. voc. (encourage)																		
Voc. (other)																		
Neg. voc. (scold)																		
Change B position																		
Wipe face (cloth) & hands																		

	min.						min.						min.					
I STATE	0	10	20	30	40	50	0	10	20	30	40	50	0	10	20	30	40	50
Alert (eyes open)																		
Drowse																		
Fuss																		

	min.						min.						min.					
POSITION	0	10	20	30	40	50	0	10	20	30	40	50	0	10	20	30	40	50
I held by M																		
Facilitate vis à vis																		
Details ______________																		

	min.						min.						min.					
TIME OUT	0	10	20	30	40	50	0	10	20	30	40	50	0	10	20	30	40	50
Details ______________																		

Approximate Amount Fed: ______________________________

Input(s): ______________________________

Easy Feeder (?): ______________ Typical Feeding (M Rept): ______________

Physical Contact = "M touches": Restraining/harsh ______________

Gentle/helping/facilitating ______________

M Mimics (open mouth): ______________________________

Playful Interaction ("games"): ______________________________

NOTES:

____

____

Appendix C

Calendar Forms

CALENDAR FORM

We are interested to know when, in your baby's first year of life, you were employed outside the home or attended school. In each month of this calendar, please check the following items:

1. Were you working or going to school that month?

If so, please check (✓) the other items for that month:

2. Was this full-time or part-time? (Full-time means that you were away from home about 40 hours per week.)
3. Name of your job.
4. What kind of child care were you able to arrange for your baby in that month?
5. Was this child care in your home or not?

When complete, please return this form to us in the enclosed envelope.

November	December	January
Your baby was born this month. 1. Did you work or go to school? Yes ________ No ________ If yes, please check the following:	Your baby was about 1 month old. 1. Did you work or go to school? Yes ________ No ________ If yes, please check the following:	Your baby was about 2 months old. 1. Did you work or go to school? Yes ________ No ________ If yes, please check the following:
2. Part-time ___ or full-time ___	2. Part-time ___ or full-time ___	2. Part-time ___ or full-time ___
3. Name of job ______________	3. Name of job ______________	3. Name of job ______________
4. Type of child care used: Sitter ______ Relative ______ Day Care Center ______ Small Group Care ______	4. Type of child care used: Sitter ______ Relative ______ Day Care Center ______ Small Group Care ______	4. Type of child care used: Sitter ______ Relative ______ Day Care Center ______ Small Group Care ______
5. Location of child care: In home _____ Out of home _____	5. Location of child care: In home _____ Out of home _____	5. Location of child care: In home _____ Out of home _____

February	March	April
Your baby was about 3 months old. 1. Did you work or go to school? Yes ________ No ________ If yes, please check the following:	Your baby was about 4 months old. 1. Did you work or go to school? Yes ________ No ________ If yes, please check the following:	Your baby was about 5 months old. 1. Did you work or go to school? Yes ________ No ________ If yes, please check the following:
2. Part-time ___ or full-time ___	2. Part-time ___ or full-time ___	2. Part-time ___ or full-time ___
3. Name of job ______________	3. Name of job ______________	3. Name of job ______________
4. Type of child care used: Sitter ______ Relative ______ Day Care Center ______ Small Group Care ______	4. Type of child care used: Sitter ______ Relative ______ Day Care Center ______ Small Group Care ______	4. Type of child care used: Sitter ______ Relative ______ Day Care Center ______ Small Group Care ______
5. Location of child care: In home _____ Out of home _____	5. Location of child care: In home _____ Out of home _____	5. Location of child care: In home _____ Out of home _____

(over)

CALENDAR FORM

Page Two

May

Your baby was about 6 months old.
1. Did you work or go to school?
Yes _______ No _______
If yes, please check the following:
2. Part-time_____ or full-time_____
3. Name of job _______________
4. Type of child care used:
Sitter _______ Relative _______
Day Care Center _______
Small Group Care _______
5. Location of child care:
In home _____ Out of home _____

June

Your baby was about 7 months old.
1. Did you work or go to school?
Yes _______ No _______
If yes, please check the following:
2. Part-time_____ or full-time_____
3. Name of job _______________
4. Type of child care used:
Sitter _______ Relative _______
Day Care Center _______
Small Group Care _______
5. Location of child care:
In home _____ Out of home _____

July

Your baby was about 8 months old.
1. Did you work or go to school?
Yes _______ No _______
If yes, please check the following:
2. Part-time_____ or full-time_____
3. Name of job _______________
4. Type of child care used:
Sitter _______ Relative _______
Day Care Center _______
Small Group Care _______
5. Location of child care:
In home _____ Out of home _____

August

Your baby was about 9 months old.
1. Did you work or go to school?
Yes _______ No _______
If yes, please check the following:
2. Part-time_____ or full-time_____
3. Name of job _______________
4. Type of child care used:
Sitter _______ Relative _______
Day Care Center _______
Small Group Care _______
5. Location of child care:
In home_____ Out of home_____

September

Your baby was about 10 months old.
1. Did you work or go to school?
Yes _______ No _______
If yes, please check the following:
2. Part-time_____ or full-time_____
3. Name of job _______________
4. Type of child care used:
Sitter _______ Relative _______
Day Care Center _______
Small Group Care _______
5. Location of child care:
In home _______ Out of home ____

October

Your baby was about 11 months old.
1. Did you work or go to school?
Yes _______ No _______
If yes, please check the following:
2. Part-time_____ or full-time_____
3. Name of job _______________
4. Type of child care used:
Sitter _______ Relative _______
Day Care Center _______
Small Group Care _______
5. Location of child care:
In home ______ Out of home ____

Appendix D

Tables Cited in Results Chapter

TABLE 19

Demographic Variables with Factor Analyses I, II, III

	DEMOGRAPHIC VARIABLES									
	Sex of I	Birth Order	Marital Status	Race	Rearing Plans	S.E.S. Total	M's Age	# Mos. Married	# of Sibs	Preg. Planned
FACTOR ANALYSIS I										
Parental Involvement Perinatally	-.09	-.06	-.59**	-.30**	-.11	-.52**	.45**	.31**	.32**	.03
Interest in Mat. Role	-.05	-.02	-.01	-.06	-.19*	.09	-.20**	-.10	.18*	.22**
Confidence in Child Care Skills	.00	.36**	.14	.31**	.15*	.15*	-.04	-.03	.02	.15*
Energy Investment	-.13	.04	-.04	-.14	.01	-.18*	.10	.08	.03	-.13
Independence; Inf. Cont.	-.08	.04	.01	-.09	.27**	.01	.19*	.12	-.05	.08
Inf. Centered Interact.	.08	-.11	-.06	-.12	.02	-.14	-.05	.05	-.02	-.16*
Child Centered Orientation to Environment	.04	-.06	-.06	-.13	-.24**	-.11	.07	.04	-.13	.03
FACTOR ANALYSIS II										
Positive M-I Interact.	-.02	-.00	-.22**	-.23**	-.12	-.23**	.28**	.15*	.15*	.01
Accept. of I & Mat. Role	.03	.18*	.09	.22**	.10	.08	.02	.06	.01	.21**

Table 19, continued

	DEMOGRAPHIC VARIABLES									
	Sex of I	Birth Order	Marital Status	Race	Rearing Plans	S.E.S. Total	M's Age	# Mos. Married	# of Sibs	Preg. Planned
M's Belief in Her Own Irreplaceability	.13	-.11	-.03	.11	-.25**	.09	-.18*	-.10	.08	.11
Sensitivity & Cooperation in Feeding	.08	-.11	.02	-.04	-.14	-.02	.08	-.02	-.02	-.10
Dependency; Ext. Control	-.05	-.02	.10	.10	-.12	.15*	-.29**	-.22**	-.02	-.05
M's Perception of I as Cuddly	.08	-.05	-.15*	-.08	-.16*	-.09	-.07	-.00	.07	.02
Preference & Perception of I as Active	.07	-.11	-.04	.10	-.06	.14	.04	-.07	.03	.01
M's Perception of Her Role Uninfluenced by Infant	-.06	.29**	.05	.14	-.23**	.04	-.02	.04	-.07	.06
FACTOR ANALYSIS III										
Quality of Mothering	.12	-.12	-.25**	-.20**	-.18*	-.22**	.17*	.18*	.08	-.02
Maternal Sep. Anxiety	.02	-.08	-.04	-.10	.29**	-.09	.11	-.03	.01	-.03
Maternal Role Investment	.01	.09	.12	.07	.02	.09	.03	.04	-.05	.19*
Stoicism	.10	.04	.09	.12	-.17*	.05	-.05	-.11	.03	.04
Pleasurable Phys. Contact	-.10	-.04	-.12	.02	-.20**	-.07	.01	.03	.20**	.02

Table 19, continued

	DEMOGRAPHIC VARIABLES									
	Sex of I	Birth Order	Marital Status	Race	Rearing Plans	S.E.S. Total	M's Age	# Mos. Married	# of Sibs	Preg. Planned
M's Belief in Her Own Irreplaceability	.06	-.05	.08	.09	.06	.05	-.15*	-.08	-.02	.03
"Visual Stimulation"	.10	-.02	-.25**	-.25**	-.24**	-.28**	.16*	.02	.08	.05

* $p < .05$
** $p < .01$

TABLE 20

Work Status with Factor Analyses I, II, III

	WORK STATUS			
	Phase III	Phase IV	Phase V	Cumulative No. of Months Worked
FACTOR ANALYSIS I				
Parental Involvement Perinatally	.08	.02	.10	.01
Interest in Mat. Role	-.11	-.06	-.11	-.10
Confidence in Child Care Skills	.08	.04	.02	.09
Energy Investment	-.00	-.01	.02	.02
Independence; Int. Control	.28**	.22**	.29**	.29**
Infant Centered Interact.	-.00	-.03	-.10	-.08
Child Centered Orientation to Environment	-.14	-.12	-.07	-.10
FACTOR ANALYSIS II				
Positive Mother-Infant Interaction	-.06	-.04	-.04	-.05
Acceptance of Infant and Maternal Role	.12	.01	-.01	.07
M's Belief in Her Own Irreplaceability	-.27**	-.24**	-.28**	-.30**
Sensitivity and Cooperation in Feeding	-.14	-.10	-.09	-.09
Dependency; Ext. Control	-.22**	-.14	-.23**	-.19*
M's Perception of Infant as Cuddly	-.06	-.05	-.13	-.14
Preference and Perception of Infant as Active	-.09	-.02	-.15*	-.10

Table 20, continued

	WORK STATUS			
	Phase III	Phase IV	Phase V	Cumulative No. of Months Worked
M's Perception of Her Role Uninfluenced by Infant	-.35**	-.36**	-.30**	-.37**
FACTOR ANALYSIS III				
Quality of Mothering	-.01	-.04	-.05	-.07
Maternal Separation Anxiety	.33**	.38**	.35**	.32**
Maternal Role Investment	.03	-.09	-.15*	-.09
Stoicism	-.19*	-.16*	-.20**	-.22**
Pleasurable Physical Contact	-.14	-.17*	-.18*	-.18*
M's Belief in Her Own Irreplaceability	.02	-.04	-.08	-.06
"Visual Stimulation"	-.13	-.18*	-.18*	-.21**

* $p < .05$
** $p < .01$

TABLE 21

Maternal Attitude Scale with Demographic Variables

	MATERNAL ATTITUDE SCALE				
	Control of Aggressions	Reciprocity	Appropriate Closeness	Emotional Complexity	Competence
DEMOGRAPHIC VARIABLES					
Sex of Infant	.04	-.01	.00	.04	.03
Birth Order	-.00	.13	-.05	-.04	-.01
Marital Status	.40**	.36**	-.05	-.25**	.10
Race	.40**	.40**	-.06	-.37**	.18*
Rearing Plans	.14	.19*	-.19*	-.02	-.04
S.E.S. Total	.43**	.34**	-.05	-.28**	.18*
Mother's Age	-.36**	-.19*	.13	.35**	-.16*
Number of Months Married	-.33**	-.12	-.04	.14	-.09
Number of Siblings	-.16*	-.15*	-.08	-.01	-.04
Pregnancy Planned	.18*	-.08	.14	.08	.05

* $p < .05$
** $p < .01$

TABLE 22

Bayley Scales - Phases III, IV, and V
with Demographic Variables, Work Status and Bayley Scales

	BAYLEY SCALES					
	Phase III		Phase IV		Phase V	
	MDI	PDI	MDI	PDI	MDI	PDI
DEMOGRAPHIC VARIABLES						
Sex of Infant	.00	.12	.08	.18*	.11	.06
Birth Order	-.10	.07	-.05	-.14	-.04	-.03
Marital Status	.22**	.14	.05	.08	-.24**	.03
Race	.11	.18*	-.03	.04	-.11	.01
Rearing Plans	-.01	-.03	-.08	.01	-.14	.02
S.E.S. Total	.04	.03	-.03	-.07	.17*	-.03
Mother's Age	-.14	-.04	-.05	-.05	.12	.06
Number of Months Married	.11	.01	-.08	-.00	.13	.04
Number of Siblings	-.02	-.05	-.03	-.11	.01	-.05
Pregnancy Planned	-.02	.08	.12	.02	.13	-.00
WORK STATUS						
Phase III	-.08	-.06	.02	-.02	.00	.03

Table 22, continued

	BAYLEY SCALES					
	Phase III		Phase IV		Phase V	
	MDI	PDI	MDI	PDI	MDI	PDI
Phase IV	.00	-.14	-.00	.01	.01	.04
Phase V	-.03	-.13	-.02	-.08	-.02	-.06
Cumulative No. of Months Worked	-.02	-.10	.01	-.03	-.00	.01
BAYLEY SCALES						
Phase III MDI	----	.50**	.23**	.29**	.07	.15*
Phase III PDI	.50**	----	.17*	.27**	.09	.09
Phase IV MDI	.23**	.17*	----	.39**	.28**	.04
Phase IV PDI	.29**	.27**	.39**	----	.25**	.49**
Phase V MDI	.07	.09	.28**	.25**	----	.38**
Phase V PDI	.15*	.09	.04	.49**	.38**	----

* $p < .05$
** $p < .01$

TABLE 23
Demographic Variables with Time Sampling - Phase III

	TIME SAMPLING VARIABLES							
	I Voc.	I Smile	M Voc.	M Smile	M Look	M Caress	I Fuss	I Cry
DEMOGRAPHIC VARIABLES								
Sex of Infant	.00	-.13	.03	.02	.06	-.05	-.09	-.04
Birth Order	-.02	-.06	-.03	-.09	-.24**	.01	-.03	.05
Marital Status	.07	.20*	-.07	.11	.05	-.07	-.06	-.09
Race	-.01	.10	-.10	-.01	-.02	-.03	-.06	-.08
Rearing Plans	-.07	.07	.11	.08	.05	.00	-.04	.09
S.E.S. Total	.02	.03	.07	.04	.00	-.16*	-.15	.15
M Education	.09	.08	-.03	.03	-.02	-.25**	-.06	-.15
M Age	.00	-.11	-.02	-.09	-.02	.09	.00	.09
No. Months Married	-.06	-.09	-.05	-.06	-.06	.05	.04	.20*
No. of Siblings	.00	-.07	-.04	-.11	-.24**	-.02	.00	.02
Preg. Planned	.08	-.03	.12	.06	.02	-.30**	.10	-.02

*$p < .05$
**$p < .01$

TABLE 24
Demographic Variables with Time Sampling - Phase IV

4

	TIME SAMPLING VARIABLES						
	I Happy Voc.	I Smile	I Neg. Voc.	M Pos. Voc.	M Voc.	M Neg. Voc.	I Held By M
DEMOGRAPHIC VARIABLES							
Sex of Infant	.05	.04	-.18*	-.04	-.04	-.06	.14
Birth Order	-.19*	-.06	.05	-.14	.15	-.01	.02
Marital Status	-.17*	-.17*	-.09	-.19*	-.05	.11	.32**
Race	-.06	-.04	-.14	-.14	.08	.12	.40**
Rearing Plans	.02	-.06	.01	-.03	-.07	.01	.20*
S.E.S. Total	-.17*	.03	-.08	-.23**	-.05	.06	.33**
M Education	-.20*	.06	-.04	-.26**	.01	.09	.32**
M Age	-.01	0	.17*	.03	.20*	-.13	-.27**
No. Months Married	-.02	.01	.18*	.02	.24**	-.09	-.25**
No. of Siblings	-.19*	-.07	.04	-.14	.20*	-.02	.02
Preg. Planned	0	-.03	-.02	-.16*	0	-.04	.16*

*$p < .05$
**$p < .01$

TABLE 25

Significant Correlations of Observation-Based Variables
Phase III with Time Sampling Behaviors Phases III and IV

Observation Variables	Phase 3 Time Sampling		Phase 4 Time Sampling	
Mother's Delight in Baby	.22**	M voc. to I	.36**	M positive voc.
	.16*	M smile to I	-.20*	M holds I
	.22**	M touch I's cheek		
	.20**	M caress		
Mother's Acceptance of Baby	.18*	M caress	.28**	M positive voc.
			.18*	M change I position
			-.20*	M wipes I face
			-.17*	M holds I
Excellence as an Informant	.26**	M voc.	.22**	Arm thrusts
	.19*	M smiles	.36**	M positive voc.
	.18*	M caress	-.21**	M holds I
	-.17*	I cries		
	-.17*	Supine		
Interventions to Baby's Rhythms	.16*	M caress	.19*	I smiles
	.18*	M moves I	.17*	M changes I position
	-.24**	I cries	-.19*	M wipes I face
			-.18*	M holds I
Amount of Food and End of Feeding	-.25**	I startle	-.23**	I positive voc.
	.27**	M smiles		
	-.16*	I fusses		
Regard for Baby's Food Preference	.25**	M looks at I	-.16*	I spits
	-.17*	M touches I mouth	-.18*	M wipes I face

Table 25, continued

Observation Variables	Phase 3 Time Sampling		Phase 4 Time Sampling	
Synchronization of Rate to B's Pace	.25**	M smiles		
	.24**	M looks at I		
	.21**	M caress		
Initiations of Interactions	.18*	M voc.	.31**	M positive voc.
	.20*	M looks at I	.20*	M changes I position
	.17*	M pats I	-.19*	M holds I
	.17*	M caress		
	.17*	M moves I		
Amount of Physical Contact	.22**	I attached: no suck	-.19*	Leg thrusts
	.17*	M caress	.20*	M positive voc.
			-.16*	M holds I
Quality of Physical Contact	.20*	I attached	-.20*	Leg thrusts
	.19*	M caress	.29**	M positive voc.
	-.22*	Up	.17*	M changes I position
			-.21**	M holds I
Mother's Response to Baby's Cry	.27**	M positive voc.	.18*	M changes B
	-.17*	Facilitate vis a vis	-.22**	M wipes face
Amount of Visual Contact	.20*	M voc.	-.17*	I burps
	.18*	M smiles	.27**	M positive voc.
	.19*	M pats	-.26**	M holds I
	.16*	M caresses		
Amount of Aud. and Voc. Contact	.33**	M voc.	-.17*	I spits
	.21**	M smiles	.31**	M holds I
	.20*	M looks	.17*	Facilitate vis a vis
	.15*	I sleeps		

Table 25, continued

Observation Variables	Phase 3 Time Sampling		Phase 4 Time Sampling	
Frequency of Play Interaction	.26**	M voc.	.35**	M positive voc.
	-.17*	Bottle propped	-.17*	M holds I
			.20*	Facilitate vis a vis
Appropriateness of Play Interaction	.24**	M vocs	-.20*	Spits up
	.18*	M smiles	-.26**	Burps
	.17*	M looks	.28**	M positive voc.
	.20*	M caress	.17*	M voc.
	.20*	M moves I	-.27**	M holds I
	-.18*	Milk		

TABLE 26

Significant Correlations of Observation-Based Variables Phase IV with Time Sampling Behaviors Phases III and IV

Observation Variables	Phase 3 Time Sampling		Phase 4 Time Sampling	
Mother's Delight in Baby	.27**	M vocs.	.16*	I purposeful spit out
	-.22**	M moves I	.36**	M positive voc.
			-.18*	I alert
Synchronization of Rate to Baby's Pace	-.28**	M moves I	-.34**	I negative voc.
	-.18*	I fuss	-.17*	I cough/choke
			-.25**	I burp
			-.17*	I drowse
			-.32**	I fuss
Initiations of Interactions	.22**	I gag/spit up	.16*	I happy voc.
	-.22**	M moves I	.28**	M positive voc.
			-.17*	M wipe I face
			-.17*	I drowse
			-.22**	I fussy
Amount of Physical Contact	.17*	I gag/spit up	.16*	I smile
	.19*	M caress	.38**	M positive voc.
Quality of Physical Contact	.20*	Arm/leg thrusts	.24**	I happy voc.
	.16*	M pats I	.17*	I arm thrusts
	.24**	M caress	.38**	M positive voc.
Amount of Visual Contact	.17*	M looks at I	.19*	I smiles
	.18*	M caresses I	.28**	I watches M's face
			.30**	M positive voc.
			-.22**	I drowse
			-.16*	I held by M

Table 26, continued

Observation Variables	Phase 3 Time Sampling		Phase 4 Time Sampling	
Amount of Aud. and Voc. Contact	.23**	M voc. to I	.29**	I happy voc.
	-.16*	M move I	.21**	I watches M's face
	-.16*	I sleeps	.50**	M positive voc.
			.20*	M holds I
Frequency of Play Interaction	.25**	M vocs.	.21**	I happy voc.
			.18*	I smile
			.23**	I watch M's face
			.19*	I purposeful spit out
			-.16*	I spit out
			.40**	M positive voc.
Appropriateness of Play Interaction	.17*	I gag	.27**	I positive voc.
	.16*	I startles	.28**	I watches M face
	.22**	M vocs to I	.18*	I purposeful spit out
	.21**	M caress	.34**	M positive voc.
	-.18*	M moves I		
	-.17*	I sleeps		
Cooperation vs. Interference	.18*	M looks at I	.17*	I watches M face
	.18*	M caress	-.17*	I negative voc.
	-.22**	M moves I	.20*	I purposeful spit out
			-.17*	M wipes I face
			-.24**	I drowse
Accessibility vs. Ignoring & Neg.	.16*	M voc. to I	.20*	I smile
			.18*	I watch M face
			.17*	I purposeful spit out
			.29**	M positive voc.
			-.16*	I drowse

Table 26, continued

Observation Variables	Phase 3 Time Sampling		Phase 4 Time Sampling	
Acceptance vs. Rejection	.21**	M voc. to I	.18*	I happy voc.
	.18*	M caress	.36**	M positive voc.
Sensitivity to Signals	.20*	M caress	-.16*	I negative voc.
	-.21**	M moves I	-.18*	I burp
			.24**	M positive voc.
			-.19*	I fuss

*p. < .05
**p. < .01

TABLE 27
Maternal Attitude Scale with Time Sampling - Phase IV

	MATERNAL ATTITUDE SCALE				
	Aggression	Reciprocity	Closeness	Emotional Complexity	Competence
TIME SAMPLING VARIABLES					
I Happy Voc.	-.04	.00	.11	.17*	-.01
I Smile	.04	-.02	.03	.19*	.09
I Negative Voc.	-.11	.04	.05	.08	.02
M Positive Voc.	-.16*	-.32**	.19*	.06	.03
M Voc.	.02	.11	-.04	-.02	.03
M Negative Voc.	.19*	.01	-.02	-.09	.09
I Held by M	.16*	.24**	-.13	-.25**	-.10

*p .05
**p .01

TABLE 28

Correlations Between Same Interview-Based Variables
Measured at Phases I, III, and IV

VARIABLE	Phase I - III Correlations	Phase I - IV Correlations	Phase III - IV Correlations
Attitude to Non-Mat. Care	.19*	.14	.32**
"Drive Level" Child	.15*	*	*
Nurturance	.37**	.30**	.53**
Autonomy vs. Control	.38**	*	*
Conf. in Mat. Skills	.31**	*	*
Maternal Investment	.39**	.37**	.40**
Positive Attitude to Mat. Role	.29**	.29**	.46**
Career Orientation	.61**	.56**	.54**
Proneness to Disorganization Under Stress	**	**	.31**
Deg. I Enjoys Phys. Contact	**	**	.24**
Deg. I Enjoys Social Contact	**	**	-.00
Deg. Mat. Interest in Social Interaction with Infant	**	**	.30**

Table 28, continued

VARIABLE	Phase I - III Correlations	Phase I - IV Correlations	Phase III - IV Correlations
Deg. I Enjoys Visual Stim.	**	**	.03
Deg. I Seen in a Positive Sense	**	**	.37**
Deg. M Feels I is Positively Attached to Her	**	**	.20**
Effects of I Characteristics on Mat. Role	**	**	.06
Separation Stress	**	**	.37**
Perc. of I Distress at Sep.	**	**	.41**
Satisfaction with Father Involvement	**	**	.33**

* $p < .05$
** $p < .01$

* This variable judged inappropriate for 8 month visit.
** This variable judged inappropriate for hospital visit.

TABLE 29

Correlations Between Same Observation-Based Variables Measured at Phase III and Phase IV

VARIABLE NAME	CORRELATION
Mother's Delight in Infant	.48**
Mother's Acceptance of Infant	.35**
Mother's Synchronization of Rate of Feeding to Baby's Pace	.19*
Appropriateness of Mother's Initiations of Interactions	.30**
Amount of Physical Contact	.32**
Quality of Physical Contact	.39**
Amount of Visual Contact	.36**

* $\underline{p} < .05$
** $\underline{p} < .01$

TABLE 30

INTERCORRELATIONS OF FACTOR ANALYSES PHASES I, III, IV

	Factor Analysis Phase III								Factor Analysis Phase IV						
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7
Factor Analysis Phase I															
1) Parental Involvement Peri.	.36**	-.03	-.07	-.05	-.13	.14	-.01	-.08	.21**	.06	.04	-.15	.12	-.11	.26**
2) Interest in Mat. Role	.28**	-.01	.35**	-.09	.13	.12	-.07	.09	.12	-.38**	.16*	-.08	.02	.06	.02
3) Conf. in Child Care Skills	.04	.32**	.01	-.03	.03	-.11	.01	.11	-.04	-.03	.14	.05	.05	-.09	-.01
4) Energy Investment	.07	-.21**	-.07	.02	.05	-.13	-.12	.02	.04	.06	-.15	-.11	.02	-.12	.05
5) Independence; Int. Control	.09	.11	-.13	.06	-.26**	-.12	-.07	-.12	.10	.09	.01	-.00	-.30**	.03	-.09
6) Inf. Centered Interaction	.20**	.00	.13	.13	.01	.15	.04	-.01	.25**	.04	.13	.00	.07	.10	.09
7) Child Centered Orientation	.20**	-.02	-.03	.22**	-.08	.00	.12	.02	.29**	-.09	-.06	.01	-.09	-.08	.02
Factor Analysis Phase III															
1) Positive M-I Interaction									.48**	-.11	.10	-.05	.23**	-.03	.10
2) Accept. of Inf. & Mat. Role									-.02	.02	.39**	.22**	-.06	-.11	-.05
3) M's Belief - Irreplacability									.04	-.40**	.03	.04	.04	.25**	.16
4) Sens. & Coop. in Feeding									.20**	-.01	-.25**	.16*	-.16*	.10	-.07
5) Dependency; Ext. Control									-.07	-.07	.05	-.05	.27**	.00	-.15
6) M's Perc. of Inf. as Cuddly									.08	-.06	.13	.05	.06	-.03	.05
7) Pref. & Perc. of Inf. as Active									.03	-.03	-.02	-.06	-.02	-.00	.20**
8) M's Perc. of Role - Uninfluenced									-.13	-.18*	.03	.18*	.21**	.09	.09
Factor Analysis Phase IV															
1) Quality of Mothering															
2) Mat. Sep. Anxiety															
3) Mat. Role Investment															
4) Stoicism															
5) Pleasurable Physical Contact															
6) M's Belief - Irreplacability															
7) "Visual Stimulation"															

*p < .05
**p < .01

TABLE 31

Time Sampling Variables - Times III and IV
with Time Sampling Variables - Times III and IV

	TIME III				TIME IV		
	I Voc.	I Smile	M Voc.	M Smile	I Voc.	I Smile	M Voc.
TIME III							
Infant Voc.	---						
Infant Smile	.37**	---					
Mother Voc.	.15	.12	---				
Mother Smile	.17*	.40**	.54**	---			
TIME IV							
Infant Voc.	-.09	-.09	.05	-.09	---		
Infant Smile	-.03	-.06	.04	-.03	.12	---	
Mother Voc.	-.03	.09	.27**	.14	.20*	.08	---

*p < .05
**p < .01

TABLE 32

Time Sampling Variables - Times III and IV
with Factor Analyses I, II and III

	TIME III						TIME IV				
	I Voc.	I Smile	M Voc.	M Smile	I Fuss	I Cry	I Voc.	I Smile	I Neg. Voc.	M Pos. Voc.	M Neg. Voc.
FACTOR ANALYSIS I											
Parental involvement perinatally	-.04	.00	.10	.01	.03	.07	.19*	.08	.08	.31**	.00
Interest in mat. role	.00	.14	.17*	.15	-.07	-.08	.02	.02	.06	.15	.05
Confidence in child care skills	-.01	.04	-.02	-.03	-.12	.01	-.08	-.08	-.04	.08	.19*
Energy investment	.01	.23**	-.07	.08	.00	.18*	.05	-.22**	.00	.13	-.11
Independence; Int. control	-.02	.23**	-.09	.07	-.03	.14	-.13	.02	-.10	-.07	-.01
Infant-centered interaction	.08	.03	-.05	.03	-.08	-.01	.03	.07	-.06	.05	.05
Child-centered orientation to env.	-.09	-.11	.06	.07	.04	.07	-.10	.01	-.08	.01	-.06
FACTOR ANALYSIS II											
Positive Mother-Infant interaction	.04	.04	.29**	.15	.01	-.07	.07	-.01	.12	.37**	-.05

Table 32, continued

	TIME III						TIME IV				
	I Voc.	I Smile	M Voc.	M Smile	I Fuss	I Cry	I Voc.	I Smile	I Neg. Voc.	M Pos. Voc.	M Neg. Voc.
Acceptance of I & mat. role	-.05	.03	-.06	.02	-.10	-.03	-.14	-.06	-.07	.03	.06
M's belief in her own irreplaceability	-.11	-.05	.00	.00	-.06	-.20*	.01	.18*	.03	.17*	.06
Sensitivity & cooperation in feeding	.02	-.04	-.07	.18*	-.18*	-.01	-.19*	-.01	-.07	-.09	-.06
Dependency; Ext. control	.08	-.02	-.06	-.05	.00	-.16*	-.02	-.20*	-.03	-.01	.11
M's perception of I as cuddly	-.04	-.09	.02	-.09	.14	-.02	.13	-.01	-.06	.09	-.11
Pref. & perc. of I as active	.06	-.07	.08	-.05	-.09	.02	.03	.02	.01	-.08	-.02
M's perception of her role uninfluenced by I	-.15	-.09	-.10	-.17*	.02	.05	-.05	.08	.01	.11	-.06
FACTOR ANALYSIS III											
Quality of mothering	.12	.00	.19*	.19*	-.09	-.08	.16*	.09	-.19*	.29**	-.12
Mat. sep. anxiety	.09	-.03	.06	.04	-.01	.09	.14	-.04	-.05	-.02	-.04
Mat. role investment	-.01	.00	.04	-.12	-.01	.02	.02	.12	.06	.07	-.04

Table 32, continued

	TIME III						TIME IV				
	I Voc.	I Smile	M Voc.	M Smile	I Fuss	I Cry	I Voc.	I Smile	I Neg. Voc.	M Pos. Voc.	M Neg. Voc.
Stoicism	.00	-.07	-.15	-.04	-.23**	-.03	-.21**	.00	-.13	-.10	.04
Pleasurable physical contact	.10	-.01	.04	-.02	.12	-.05	.14	.05	.14	.32**	-.03
M's belief in her own irreplaceability	-.02	.08	-.07	.08	.13	-.08	-.02	.23**	-.03	-.02	.08
"Visual stimulation"	.06	-.04	.09	.11	-.06	-.08	.15	.14	.08	.22**	-.03

*p < .05
**p < .01

TABLE 33

Maternal Attitude Scale with Factor Analyses I, II, III

	MATERNAL ATTITUDE SCALE				
	Control of Aggressions	Reciprocity	Appropriate Closeness	Emotional Complexity	Competence
FACTOR ANALYSIS I					
Parental Involvement Perinatally	-.31**	-.46**	.21**	.25**	-.14
Interest in Maternal Role	.10	-.16*	-.04	-.10	.13
Confidence in Child Care Skills	.12	-.03	-.00	-.18*	.02
Energy Investment	-.11	-.02	.06	.10	-.19*
Independence; Int. Control	.08	.04	-.04	.07	-.07
Infant Centered Interaction	-.06	-.13	.06	.01	.06
Child Centered Orientation to Environment	-.06	-.17*	.28**	-.03	.12
FACTOR ANALYSIS II					
Positive Maternal-Infant Interaction	-.21**	-.28**	.11	.10	-.02
Acceptance of Infant & Maternal Role	.16*	-.08	-.01	-.17*	.31**

Table 33, continued

	MATERNAL ATTITUDE SCALE				
	Control of Aggressions	Reciprocity	Appropriate Closeness	Emotional Complexity	Competence
M's Belief in Her Own Irreplaceability	.22**	-.01	-.02	-.06	.10
Sensitivity and Cooperation in Feeding	-.09	-.12	.05	-.07	.05
Dependency; Ext. Control	.24**	-.03	-.10	-.22**	.20**
M's Perception of Infant as Cuddly	-.19*	-.22**	.03	-.03	.06
Preference and Perception of Infant as Active	.06	.05	.05	.01	-.07
M's Perception of Her Role Uninfluenced by Infant	-.09	.14	-.10	-.17*	-.02
FACTOR ANALYSIS III					
Quality of Mothering	-.18*	-.30**	.19*	.18*	-.05
Maternal Separation Anxiety	-.15*	.09	.07	.11	-.13
Maternal Role Investment	.14	-.14	.02	-.02	.19*
Stoicism	.02	.01	-.05	-.05	.13
Pleasurable Physical Contact	-.08	.03	.02	-.04	.12

Table 33, continued

	MATERNAL ATTITUDE SCALE				
	Control of Aggressions	Reciprocity	Appropriate Closeness	Emotional Complexity	Competence
M's Belief in Her Own Irreplaceability	.16*	.11	-.12	-.11	.01
"Visual Stimulation"	-.23**	-.17*	.04	.11	-.06

* $p < .05$
** $p < .01$

TABLE 34
Bayley - Phase III, IV, and V with Time Sampling - Phase III

	PHASE III		PHASE IV		PHASE V	
	MDI	PDI	MDI	PDI	MDI	PDI
TIME SAMPLING VARIABLES						
I Voc.	-.09	-.12	.08	-.10	-.03	-.08
I Smile	-.06	.00	.05	-.01	-.06	-.05
M Voc.	-.01	.07	.13	-.08	.14	.02
M Smile	.09	.16*	-.02	.03	-.01	.05
M Look	.16*	.11	.07	.09	.00	.11
M Caress	.13	.12	.12	-.03	.06	-.09
I Fuss	-.11	-.05	-.11	-.09	-.06	-.15
I Cry	-.09	-.06	.00	-.03	.04	.02

*$p < .05$
**$p < .01$

TABLE 35
Bayley - Phases III, IV, and V
with Time Sampling - Phase IV

	PHASE III		PHASE IV		PHASE V	
	MDI	PDI	MDI	PDI	MDI	PDI
TIME SAMPLING VARIABLES						
I Happy Voc.	.04	.05	.26**	.04	.09	-.07
I Smile	-.01	-.02	.14	.06	-.01	-.04
I Negative Voc.	.01	.02	-.05	-.01	-.09	.00
M Positive Voc.	.16*	.14	.21**	.08	.18*	-.05
M Voc.	-.15	.00	-.09	.01	-.03	.02
M Negative Voc.	.06	.06	-.11	-.10	-.12	-.09
I Held by Mother	-.02	-.03	-.04	-.09	-.09	-.07

*$p < .05$
**$p < .01$

TABLE 36

Correlation Coefficients Between the Stranger Approach Progression, Brief Separation, Strange Situation Behavior Instrument and Selected Infant Behaviors Time Sampled at 3 and 8 Months of Age

Feeding Behavior Scores	STR. APP. PROG.	BRIEF SEPARATION No Concern	Moment. Concern	Frets	Activated	SSBI Cry Ep. 4	Cry Ep. 6	Cry Ep. 7
Time Sampling 3								
Fuss	.01	-.08	-.06	.16*	.02	-.09	-.03	-.02
Cry	.11	-.04	-.04	.03	.06	.01	.12	-.05
Time Sampling 4								
Negative Voc.	.16*	-.04	-.12	.17*	.03	.17*	.14	.16*
Fuss	.14	-.09	-.10	.21**	.05	.05	.11	.03

*p. ∠.05

**p. ∠.01

TABLE 37

Correlation Coefficients Between the SSBI and the Stranger Approach Progression and the Brief Separation

SSBI Behavior Scores	Episode No.	STR. APP. PROG.	BRIEF SEPARATION No Concern	Moment. Concern	Frets	Activated
Contact Maintaining to Mother	2	.08	-.03	.02	.08	-.05
	3	.13	-.08	-.12	.21**	.04
	5	.23**	-.10	-.16*	.16	.15*
	8	.28**	-.10	-.17*	.20**	.13
Proximity Seeking to Mother	2	-.13	-.11	.00	.15*	.00
	3	.10	-.09	-.04	.13	.04
	5	.18*	-.14	-.01	.11	.09
	8	.18*	-.18*	.04	.15*	.05
Contact Resisting to Mother	2	.00	.00	.08	-.04	-.06
	3	-.02	-.06	-.05	-.03	.15*
	5	.09	-.07	-.05	.29**	-.11
	8	-.01	.01	.00	.00	.00
Proximity Avoidance to Mother	2	***	***	***	***	***
	3	-.01	.10	-.05	-.03	-.04
	5	.14	-.14	.06	.06	.04
	8	.04	.03	.03	.02	-.09
Search Behavior	4	-.01	-.12	.04	-.07	.17*
	6	.01	-.03	-.05	.04	.06
	7	.08	.03	-.09	.07	.00
Cry	4	.24**	-.23**	-.08	.19*	.19*
	6	.20**	-.30**	-.00	.23**	.16*
	7	.18*	-.12	-.14	.25**	.09
Contact Maintaining to Stranger	3	-.09	-.06	.12	-.06	.00
	4	.08	-.06	-.02	.10	.01
	7	.01	-.14	.08	.10	-.01
Proximity Seeking to Stranger	3	.01	-.12	.10	.09	-.04
	4	.07	-.09	.09	.04	-.02
	7	-.04	-.05	.21**	-.02	-.05
Contact Resisting to Stranger	3	.13	-.04	-.06	.19*	-.05
	4	.14	-.12	-.02	.11	.06
	7	.12	-.08	-.15*	.29**	.02
Proximity Avoidance to Stranger	3	.10	-.02	-.05	.15*	-.05
	4	.14	-.06	-.04	.12	.02
	7	.04	-.10	-.11	.26**	.02

*$p < .05$

**$p < .01$

***The low incidence of Proximity Avoidance in this Episode prevented appropriate statistical analyses.

TABLE 38

Bayley Scales - Phases III, IV, and V with Factor Analyses I, II, III

	BAYLEY SCALES					
	Phase III		Phase IV		Phase V	
	MDI	PDI	MDI	PDI	MDI	PDI
FACTOR ANALYSIS I						
Parental Involvement Perinatally	-.10	-.12	.06	-.08	.23**	.04
Interest in Maternal Role	.02	.02	.02	-.06	.13	.00
Confidence in Child Care Skills	.03	.03	.05	-.01	.03	-.02
Energy Investment	.02	.01	.02	-.08	.05	-.19*
Independence; Int. Control	-.02	-.01	-.08	.07	.02	.12
Infant Centered Interaction	.08	.04	.15*	.14	.02	.10
Child Centered Orientation to Environment	.07	.10	.04	.11	.12	.01
FACTOR ANALYSIS II						
Positive Mother-Infant Interaction	.17*	.20**	.15*	.01	.22**	.02
Acceptance of Infant and Maternal Role	.11	.14	.03	.08	.04	.07

Table 38, continued

	BAYLEY SCALES					
	Phase III		Phase IV		Phase V	
	MDI	PDI	MDI	PDI	MDI	PDI
M's Belief in Her Own Irreplaceability	.12	.16*	-.02	.10	.02	.11
Sensitivity and Cooperation in Feeding	.12	.08	-.14	.19*	.05	.04
Dependency; Ext. Control	.07	-.03	.07	.06	-.14	-.05
M's Perception of Infant as Cuddly	-.06	-.03	.12	.14	.10	.17*
Preference and Perception of Infant as Active	.10	-.03	.01	.04	.01	.08
M's Perception of Her Role Uninfluenced by Infant	.02	.07	-.09	-.08	.08	-.05
FACTOR ANALYSIS III						
Quality of Mothering	.14	.23**	.23**	.08	.19*	.01
Maternal Separation Anxiety	.02	-.07	.14	-.04	-.03	-.05
Maternal Role Investment	-.02	.10	.19*	.02	.04	.09
Stoicism	.18*	.09	.06	.07	.01	.06
Pleasurable Physical Contact	.05	.01	.18*	-.08	-.09	-.20**

Table 38, continued

	BAYLEY SCALES					
	Phase III		Phase IV		Phase V	
	MDI	PDI	MDI	PDI	MDI	PDI
M's Belief in Her Own Irreplaceability	-.05	.17*	-.03	.03	-.10	-.10
"Visual Stimulation"	.01	.09	.19*	.08	.20**	.10

* p .05
** p .01

TABLE 39

Correlations Between Selected Factor Scores and the SSBI (N=164)

		VARIABLE NAMES				
SSBI Behavior Scores	Episode No.	Int. in Mat. Role (Phase I)	Sens. in Feeding (Phase III)	Belief Irrep. (Phase III)	Belief Irrep. (Phase IV)	Mat. Sep. Anxiety (Phase IV)
Contact Maintaining to Mother	2	.06	.06	.01	.09	-.09
	3	.03	.23**	.06	.26**	-.07
	5	.11	.27**	.06	.22**	-.11
	8	.21**	.14	.11	.26**	-.21**
Proximity Seeking to Mother	2	.03	.07	-.02	.14	-.07
	3	-.04	.28**	.02	.20**	-.03
	5	.11	.22**	.07	.11	-.24**
	8	.01	.11	.05	.17*	-.18*
Contact Resisting to Mother	2	.07	.08	-.05	.00	-.08
	3	-.17*	.00	-.19*	.13	.10
	5	.19*	.17*	.16*	.12	-.09
	8	.11	-.04	.09	.03	.00
Proximity Avoidance to Mother	2	***	***	***	***	***
	3	.07	-.07	.01	-.03	-.06
	5	-.06	.14	.05	.16*	.06
	8	-.03	-.04	-.02	-.05	.14
Search Behavior	4	.04	.11	.11	.01	-.16*
	6	.07	.04	.03	.04	-.11
	7	-.06	.07	-.09	-.02	-.10
Cry	4	.16*	.24**	.10	.27**	-.18*
	6	.04	.17*	.03	.23**	-.05
	7	.13	.18*	.14	.26**	-.12
Contact Maintaining to Stranger	3	.04	-.05	.00	-.09	-.05
	4	.10	.03	.00	.01	-.07
	7	-.07	.06	.02	.08	.16*
Proximity Seeking to Stranger	3	.10	.00	.08	-.06	-.18*
	4	.08	.09	-.01	-.02	-.16*
	7	-.09	.07	-.02	-.07	.12
Contact Resisting to Stranger	3	.13	.17*	.08	.18*	-.01
	4	.13	.13	.17*	.14	-.16*
	7	.17*	.12	.14	.15*	-.07
Proximity Avoidance to Stranger	3	.16*	.22**	.19*	.18*	-.16*
	4	.10	.14	.11	.08	-.14
	7	.17*	.08	.08	.12	.07

*p. <.05
**p. <.01
***The low incidence of Proximity Avoidance in this Episode prevented appropriate statistical analyses.

TABLE 40

Correlations Between Selected Observation-Based Variables and the SSBI (N=164)

		VARIABLE NAMES					
SSBI Behavior Scores	Episode No.	Amt. Phy. Contact (Phase III)	Visual Contact (Phase III)	Aud. & Voc. Contact (Phase III)	Freq. Play (Phase III)	Appropriate Initiation Interact. (Phase III)	Effect. Res. to Cry (Phase III)
Contact Maintaining to Mother	2	.06	.09	.13	.12	.14	.08
	3	.05	.10	.08	.07	.07	.06
	5	.14	.15*	.19*	.14	.16*	.16*
	8	.22**	.15*	.20**	.15*	.14	.14
Proximity Seeking to Mother	2	.02	.08	.04	.02	-.01	-.03
	3	.05	.12	.14	.10	.14	.06
	5	.11	.11	.07	.06	.03	.10
	8	.10	.05	.09	.11	.06	.06
Contact Resisting to Mother	2	.07	.07	.11	.12	.13	.05
	3	.02	.00	.01	.03	.02	.01
	5	.11	.00	-.02	.07	.07	.12
	8	-.04	-.01	-.04	-.08	-.05	.01
Proximity Avoidance to Mother	2	***	***	***	***	***	***
	3	.07	.00	.06	.07	.02	.01
	5	-.04	.02	-.18*	-.07	-.05	-.03
	8	-.07	.06	-.07	-.08	-.02	-.08
Search Behavior	4	.01	.06	.03	.06	.01	.08
	6	.02	.01	-.05	-.03	-.11	.00
	7	.14	.04	.07	.07	.03	.07
Cry	4	.04	.08	.13	.08	.03	.06
	6	.06	.07	.05	.02	-.08	-.03
	7	.10	.10	.14	.09	-.02	.03
Contact Maintaining to Stranger	3	.03	.07	.10	.04	.04	.06
	4	.09	.03	-.02	-.06	-.01	.01
	7	.05	-.01	.02	-.02	-.14	-.09
Proximity Seeking to Stranger	3	.01	.09	.02	-.02	-.03	.02
	4	.16*	.08	.01	-.01	.03	.07
	7	.10	.08	.05	-.04	-.00	.03
Contact Resisting to Stranger	3	-.04	-.06	.08	.04	.04	.06
	4	.03	.04	.08	.14	.09	.10
	7	.04	.06	.14	.15*	.05	.07
Proximity Avoidance to Stranger	3	-.01	-.01	.04	.04	.05	.01
	4	.05	.01	.02	.10	.06	.13
	7	.08	-.00	.05	.09	.02	.07

*p. .05

**p. .01

***The low incidence of Proximity Avoidance in this Episode prevented appropriate statistical analyses.

TABLE 41

Correlations Between Selected Interview-Based Variables and the SSBI (N=164)

		VARIABLE NAMES				
SSBI Behavior Scores	Episode No.	Career Orientation (Phase III)	Career Orientation (Phase IV)	M Interp. of I Dis. at Sep. (Phase IV)	I Discrim. of Care-giver (Phase IV)	Deg. I is Positively Attached (Phase IV)
Contact Maintaining to Mother	2	-.10	-.10	-.19*	-.11	.08
	3	-.01	.00	-.29**	-.19*	.22**
	5	.02	-.01	-.23**	-.16*	.20**
	8	.03	-.02	-.29**	-.25**	.16*
Proximity Seeking to Mother	2	.10	-.03	-.23**	-.12	.10
	3	-.04	-.00	-.15*	-.15*	.18*
	5	-.05	-.08	-.08	-.18	.12
	8	.10	.02	-.24**	-.20**	.02
Contact Resisting to Mother	2	-.08	.05	-.17*	-.18*	.13
	3	.09	.06	-.11	-.09	.08
	5	.02	-.03	-.17*	-.10	.05
	8	.16	.03	-.00	.00	.10
Proximity Avoidance to Mother	2	***	***	***	***	***
	3	-.01	-.01	-.05	.12	.03
	5	-.19*	-.02	-.27**	-.05	.14
	8	-.14	-.04	.02	.12	-.04
Search Behavior	4	.00	-.03	-.13	-.03	-.10
	6	.03	.05	-.13	-.07	-.07
	7	.03	.04	-.05	.00	-.03
Cry	4	-.08	-.03	-.24**	-.26**	.15*
	6	.06	.05	-.19*	-.24**	.09
	7	-.02	.03	-.23**	-.27**	.16*
Contact Maintaining to Stranger	3	-.14	-.14	-.07	.12	-.06
	4	-.06	.02	-.05	.01	-.02
	7	.12	.09	.02	-.02	.00
Proximity Seeking to Stranger	3	-.05	-.10	-.09	.03	-.06
	4	-.04	-.00	-.06	-.08	-.07
	7	.15*	.15*	.08	.04	-.08
Contact Resisting to Stranger	3	-.08	.05	-.17*	-.18*	.13
	4	-.04	-.03	-.20**	-.11	.11
	7	-.18*	-.09	-.18*	-.08	.09
Proximity Avoidance to Stranger	3	-.09	-.14	-.13	-.21**	.17*
	4	-.08	-.02	-.14	-.05	.05
	7	-.14	-.11	-.12	-.09	.01

*$p. < .05$

**$p. < .01$

***The low incidence of Proximity Avoidance in this Episode prevented appropriate statistical analyses.

TABLE 42

83 WORKING MOTHERS: PATTERNS OF EMPLOYMENT

Baby No.	Individual Months Worked During Baby's First 12 Months of Life 1	2	3	4	5	6	7	8	9	10	11	12
3000			X	X	X	X	X	X	X	X	X	X
3004	X	X	X	X	X	X	X	X	X	X	X	X
3009				X	X	X	X	X	X	X	X	X
3012	X	X	X	X	X	X	X	X			X	X
3014				X	X	X	X	X				X
3015			X						X	X	X	X
3016			X	X	X	X	X	X				X
3019	X	X	X	X	X	X	X	X	X	X	X	X
3023			X	X	X	X	X	X	X	X	X	X
3024							X	X	X	X	X	X
3027		X	X	X				X	X	X	X	
3036					X	X	X	X	X	X	X	X
3048					X	X	X	X	X	X	X	X
3058				X	X	X	X	X			X	X
3059							X	X	X	X	X	X
3060	X	X	X	X	X	X	X	X	X	X	X	X
3061				X	X	X	X	X	X	X	X	X
3064				X	X	X	X	X	X	X	X	X
3068				X	X	X	X	X	X	X		
3071				X	X	X	X	X	X	X	X	X

Table 42, continued

	Individual Months Worked During Baby's First 12 Months of Life											
Baby No.	1	2	3	4	5	6	7	8	9	10	11	12
3076										X	X	X
3080				X	X	X	X	X	X	X	X	X
3084				X	X	X	X	X	X	X	X	X
3085					X	X	X	X	X	X	X	X
3087		X	X	X	X	X	X	X	X	X	X	X
3092				X	X	X	X	X	X	X	X	X
3095			X	X	X	X	X	X	X	X	X	X
3099								X	X	X	X	X
3101									X	X	X	X
3104					X	X	X	X	X	X	X	X
3107			X	X	X	X	X	X	X	X	X	X
3109				X	X	X	X	X	X	X	X	X
3110				X	X	X	X	X	X	X	X	X
3113			X	X	X	X	X	X	X	X	X	X
3114			X	X	X	X	X	X	X			X
3116				X	X	X	X	X	X	X	X	X
3127				X	X	X	X	X		X	X	
3130		X	X	X	X	X	X	X	X	X	X	
3131			X	X	X	X	X	X	X	X	X	X
3132							X	X	X		X	
3133			X	X	X	X	X	X	X	X	X	X
3135					X	X	X	X	X	X	X	X
3136		X	X	X	X	X	X	X	X	X	X	X
3142	X	X	X	X	X	X	X	X	X	X	X	X
3144		X	X	X	X	X	X	X	X	X	X	X

Table 42, continued

Baby No.	Individual Months Worked During Baby's First 12 Months of Life 1	2	3	4	5	6	7	8	9	10	11	12
3146					X	X	X	X	X	X		
3148			X	X	X	X	X	X	X	X	X	X
3150				X	X	X	X	X	X	X	X	X
3155				X	X	X	X	X	X	X	X	X
3157				X	X	X	X	X	X	X	X	X
3159			X	X	X	X	X	X	X	X	X	X
3160	X	X	X	X	X	X	X		X	X	X	X
3161									X	X	X	X
3162			X	X	X	X	X	X	X	X	X	X
3164											X	X
3168		X	X	X	X	X	X	X	X	X	X	X
3170				X	X	X	X	X			X	X
3172				X	X	X	X	X	X	X	X	X
3179			X	X	X	X			X	X	X	X
3180					X	X	X	X	X	X	X	X
3186			X	X	X	X	X	X	X	X	X	X
3190			X	X	X	X	X	X	X	X	X	X
3192			X	X	X				X	X	X	X
3194			X	X	X	X	X	X	X	X	X	X
3199			X	X	X	X	X	X	X	X	X	X
3200						X	X	X	X	X	X	X
3210		X	X	X	X	X	X	X	X	X	X	X
3216							X	X	X	X	X	X
3224			X	X	X			X	X	X	X	X
3226			X	X	X	X	X	X	X	X	X	X
3233				X	X	X	X	X	X	X	X	X

Table 42, continued

	Individual Months Worked During Baby's First 12 Months of Life											
Baby No.	1	2	3	4	5	6	7	8	9	10	11	12
3234	X	X	X	X	X	X	X	X	X	X	X	X
3236				X	X	X	X	X	X	X	X	X
3244						X	X	X	X	X	X	X
3245							X	X	X	X	X	X
3248										X	X	X
3250			X	X	X	X	X	X	X	X	X	X
3257			X	X	X	X	X	X	X	X	X	X
3258	X	X	X	X	X	X	X	X	X	X	X	X
3260	X	X	X	X	X		X	X	X	X	X	X
3265							X	X	X	X	X	X
3267				X	X	X	X	X	X	X	X	X
3269						X	X	X	X	X	X	X

TABLE 43

Cell Frequencies for Analyses of Variance

(N = 74 Non-Working Mothers)

	SEX OF INFANT		TOTALS
	Male	Female	
74 Non-Working Mothers	35	39	74

TABLE 44

Cell Frequencies for Analyses of Variance

(N = 83 Working Mothers)

	Onset of Care			Part/Full Time		Type of Care		Location of Care		Sex of Infant	
	0-3 Mos.	4-6 Mos.	7-12 Mos.	Part Time	Full Time	Individ.	Group	In Own Home	Out of Home	Male	Female
Onset of Care											
0-3 Months				9	29	34	4	12	26	19	19
4-6 Months				12	20	26	6	8	24	19	13
7-12 Months				6	7	11	2	7	6	7	6
Part/Full Time											
Part Time						26	1	16	11	16	11
Full Time						45	11	11	45	29	27
Type of Care											
Individual								27	44	40	31
Group								0	12	5	7
Location of Care											
In Own Home										15	12
Out of Home										30	26
Sex of Infant											
Male											
Female											
Total/Cell	38	32	13	27	56	71	12	27	56	45	38

TABLE 45

Cell Frequencies for Analyses of Variance

(N = 28 Working Mothers)

	SEX OF INFANT Male	 Female	TOTALS
28 Working Mothers			
Individual Care	8	9	17
Group Care	7	4	11

TABLE 46

Cell Frequencies for Analyses of Variance

(N = 31 Working Mothers)

	SEX OF INFANT		TOTALS
	Male	Female	
31 Working Mothers			
Care in Home	6	8	14
Care Out of Home	8	9	17

TABLE 47

Analysis of Variance Results: Attachment Behaviors Toward the Mother

(N = 83 working/74 non-working mothers)

SOURCE	df	CONTACT MAINTAINING		PROXIMITY SEEKING		CONTACT RESISTING		PROXIMITY AVOIDING		SEARCH BEHAVIOR		CRY BEHAVIOR	
		ms	F	ms	F	ms	F	ms	F	ms	F	ms	F
Work Status (W)	1	.943	.157	.510	.115	.291	.430	.394	2.000	3.709	.904	.005	.000
Sex of Infant (S)	1	.017	.003	4.676	1.005	.105	.155	.002	.011	8.110	1.977	3.486	.244
[o]Episode	3[c]		110.859***		128.504***		14.524***		6.104***		97.520***		75.544***
WS	1	3.922	.652	25.812	5.825*	3.113	4.593*	.236	1.199	.400	.098	2.330	.163

* $p. < .05$
** $p. < .01$
*** $p. < .001$
[o] Episode analyzed by multivariate test of significance using Wilks Lambda criterion; no ms value
[c] Note: df for Episode equals 2 for Search Behavior, Cry Behavior

TABLE 48

Analysis of Variance Results: Attachment Behaviors Toward the Stranger
(N = 83 working/74 non-working mothers)

SOURCE	df	CONTACT MAINTAINING		PROXIMITY SEEKING		CONTACT RESISTING		PROXIMITY AVOIDING	
		ms	F	ms	F	ms	F	ms	F
Work Status (W)	1	.414	.297	3.047	1.654	8.817	3.332	6.553	3.017
Sex of Infant (S)	1	1.554	1.113	1.163	.631	5.334	2.015	5.991	2.758
^{o}Episode	2		41.805***		18.706***		19.380***		.526
WS	1	.407	.292	1.672	.907	1.957	.739	.016	.007

* $p. < .05$
** $p. < .01$
*** $p. < .001$

^{o}Episode analyzed by multivariate test of significance using Wilks Lambda criterion; no ms value

TABLE 49

Analysis of Variance Results: Attachment Behaviors Toward the Mother

(N = 31 working/74 non-working mothers)

SOURCE	df	CONTACT MAINTAINING		PROXIMITY SEEKING		CONTACT RESISTING		PROXIMITY AVOIDING		SEARCH BEHAVIOR		CRY BEHAVIOR	
		ms	F	ms	F	ms	F	ms	F	ms	F	ms	F
Work Status (W)	1	1.714	.269	4.551	1.003	.919	1.735	.325	1.268	5.152	1.299	.668	.045
Sex of Infant (S)	1	11.343	1.781	4.071	.898	1.091	2.059	.040	.157	2.747	.692	8.978	.599
[o]Episode	3[a]		79.471***		85.538***		7.070***		3.852*		65.822***		46.539***
WS	1	5.773	.906	.880	.194	.112	.211	.160	.622	.037	.009	24.661	1.645

* p. < .05

** p. < .01

*** p. < .001

[o] Episode analyzed by multivariate test of significance using Wilks Lambda criterion; no ms value

[a] Note: df for Episode equals 2 for Search Behavior, Cry Behavior

TABLE 50

Analysis of Variance Results: Attachment Behaviors Toward the Stranger

(N = 31 working/74 non-working mothers)

SOURCE	df	CONTACT MAINTAINING ms	 F	PROXIMITY SEEKING ms	 F	CONTACT RESISTING ms	 F	PROXIMITY AVOIDING ms	 F
Work Status (W)	1	.037	.023	3.981	1.939	12.895	4.957*	5.166	2.054
Sex of Infant (S)	1	.018	.011	.001	.001	.217	.083	1.542	.613
°Episode	2		21.395***		13.329***		12.870***		.073
WS	1	.266	.164	.097	.047	.110	.042	1.820	.724

* p. < .05
** p. < .01
*** p. < .001

°Episode analyzed by multivariate test of significance using Wilks Lambda criterion; no ms value

TABLE 51

Analysis of Variance Results: Attachment Behaviors Toward the Mother

(N = 83 Working Mothers)

SOURCE	df	CONTACT MAINTAINING ms	CONTACT MAINTAINING F	PROXIMITY SEEKING ms	PROXIMITY SEEKING F	CONTACT RESISTING ms	CONTACT RESISTING F	PROXIMITY AVOIDING ms	PROXIMITY AVOIDING F	SEARCH BEHAVIOR ms	SEARCH BEHAVIOR F	CRY BEHAVIOR ms	CRY BEHAVIOR F
Onset of Care (O)	2	2.356	.464	6.336	1.498	.781	1.107	.203	2.376	6.479	1.603	22.532	1.687
Part/Full Time (P)	1	16.811	3.382	3.223	.759	.637	.947	.126	1.391	6.681	1.668	30.094	2.228
Type of Care (T)	1	.006	.001	.010	.003	.136	.203	.052	.566	.068	.017	2.333	.170
Location of Care (L)	1	7.579	1.476	3.016	.754	.000	.001	.000	.000	.389	.096	13.892	1.004
Sex of Infant (S)	1	1.738	.339	25.968	6.495*	2.096	3.042	.090	.971	6.211	1.561	6.127	.443
[a]Episode (E)	3[b]		64.940***		81.213***		8.666***		3.185*		55.739***		39.338***
OP	2	1.998	.394	1.646	.389	.133	.189	.091	1.071	.318	.079	8.872	.664
OT	2	6.062	1.172	2.919	.689	1.509	2.238	.046	.523	1.602	.394	27.932	2.124
OL	2	.318	.061	1.845	.434	2.302	3.519*	.301	3.637*	5.706	1.444	13.503	1.002
OS	2	1.502	.285	.472	.118	1.791	2.816	.010	.111	1.032	.257	15.077	1.122
PT					invalid analysis: inadequate cases per cell								
PL	1	.223	.044	8.217	1.953	.002	.003	.000	.000	14.627	3.754	26.313	1.968
PS	1	2.560	.514	8.217	2.118	2.927	4.559*	.097	1.077	2.910	.731	4.380	.322
TL						invalid analysis: missing cell							
TS	1	.662	.127	.271	.067	1.602	2.397	.000	.000	9.623	2.425	19.985	1.453
LS	1	.399	.078	.139	.035	.002	.003	.002	.019	8.400	2.111	2.220	.160

* p. < .05
** p. < .01
*** p. < .001
[a]Episode analyzed by multivariate test of significance using Wilks Lambda criterion; no ms value
[b]Note: df for Episode equals 2 for Search Behavior, Cry Behavior

TABLE 52

Analysis of Variance Results: Attachment Behaviors Toward the Stranger

(N = 83 Working Mothers)

SOURCE	df	CONTACT MAINTAINING ms	CONTACT MAINTAINING F	PROXIMITY SEEKING ms	PROXIMITY SEEKING F	CONTACT RESISTING ms	CONTACT RESISTING F	PROXIMITY AVOIDING ms	PROXIMITY AVOIDING F
Onset of Care (O)	2	.129	.110	2.051	1.393	2.306	1.099	.410	.292
Part/Full Time (P)	1	.045	.039	3.428	2.317	1.157	.668	.312	.251
Type of Care (T)	1	.011	.010	.042	.028	8.699	4.850*	5.256	4.338*
Location of Care (L)	1	1.013	.909	1.717	1.156	.300	.148	.995	.746
Sex of Infant (S)	1	1.757	1.576	2.715	1.829	6.913	3.407	2.796	2.096
°Episode (E)	2		30.251***		13.016***		6.172**		.431
OP	1	.138	.117	.695	.625	.374	.178	.006	.004
OT	1	.039	.033	5.432	3.911*	13.249	7.914***	3.459	2.754
OL	1	1.883	1.691	4.809	3.510*	2.413	1.177	.003	.002
OS	1	.138	.120	2.434	1.697	3.674	1.917	2.108	1.603
PT		invalid analysis: inadequate cases per cell							
PL	1	.027	.024	.227	.152	6.420	3.193	.414	.306
PS	1	.163	.145	.284	.194	.044	.022	1.296	.977
TL		invalid analysis: missing cell							
TS	1	.636	.568	.037	.025	11.617	6.477*	6.286	5.188*
LS	1	.201	.181	.000	.000	.017	.008	.225	.169

* p. $<$ .05
** p. $<$ .01
*** p. $<$ .001
°Episode analyzed by multivariate test of significance using Wilks Lambda criterion; no ms value

TABLE 53

Analysis of Variance Results: Attachment Behaviors Toward the Mother

(N = 28 Working Mothers)

SOURCE	df	CONTACT MAINTAINING		PROXIMITY SEEKING		CONTACT RESISTING		PROXIMITY AVOIDING		SEARCH BEHAVIOR		CRY BEHAVIOR	
		ms	*F*	*ms*	*F*	*ms*	*F*	*ms*	*F*	*ms*	*F*	*ms*	*F*
Type of Care (T)	1	1.634	.343	3.783	.946	5.455	12.823**	.019	1.447	5.787	1.501	5.484	.487
Sex of Infant (S)	1	2.747	.577	.025	.006	.027	.064	.001	.101	3.048	.790	22.939	2.038
[a]Episode	3[b]		27.971***		25.973***		5.308**		.827		13.905***		11.326***
TS	1	27.754	5.831*	18.754	4.689*	.291	.683	.002	.162	.125	.032	58.153	5.167*

* p. < .05
** p. < .01
*** p. < .001
[a] Episode analyzed by multivariate test of significance using Wilks Lambda criterion; no *ms* value
[b] Note: df for Episode equals 2 for Search Behavior, Cry Behavior.

TABLE 54

Analysis of Variance Results: Attachment Behaviors Toward the Stranger

(N = 28 Working Mothers)

SOURCE	df	CONTACT MAINTAINING ms	 F	PROXIMITY SEEKING ms	 F	CONTACT RESISTING ms	 F	PROXIMITY AVOIDING ms	 F
Type of Care (T)	1	1.050	.748	3.428	3.220	2.965	1.256	.042	.023
Sex of Infant (S)	1	1.005	.004	.404	.379	3.304	1.400	.746	.413
^{o}Episode	2		8.656***		8.298**		.810		.069
TS	1	1.727	1.230	.375	.352	8.740	3.703	10.133	5.613*

* p. < .05
** p. < .01
*** p. < .001

^{o}Episode analyzed by multivariate test of significance using Wilks Lambda criterion; no ms value

TABLE 55

Analysis of Variance Results: Attachment Behaviors Toward the Mother

(N = 31 Working Mothers)

SOURCE	df	CONTACT MAINTAINING ms	 F	PROXIMITY SEEKING ms	 F	CONTACT RESISTING ms	 F	PROXIMITY AVOIDING ms	 F	SEARCH BEHAVIOR ms	 F	CRY BEHAVIOR ms	 F
Location of Care (L)	1	2.525	.535	.878	.273	.542	3.964	.164	1.001	.278	.084	7.139	.494
Sex of Infant (S)	1	15.327	3.246	.119	.037	.100	.732	.044	.405	.576	.174	34.985	2.419
[°]Episode	3[°]		48.248***		38.458***		1.764		.605		26.860***		14.240***
LS	1	5.918	1.254	11.548	3.586	.003	.020	.022	.201	6.671	2.016	36.854	2.549

* p. < .05
** p. < .01
*** p. < .001
[°]Episode analyzed by multivariate test of significance using Wilks Lambda criterion; no ms value
[°]Note: df for Episode equals 2 for Search Behavior, Cry Behavior

TABLE 56

Analysis of Variance Results: Attachment Behaviors Toward the Stranger

(N = 31 Working Mothers)

SOURCE	df	CONTACT MAINTAINING ms	 F	PROXIMITY SEEKING ms	 F	CONTACT RESISTING ms	 F	PROXIMITY AVOIDING ms	 F
Location of Care (L)	1	.225	.170	.059	.036	.244	.388	.962	.831
Sex of Infant (S)	1	.116	.087	.064	.039	.000	.000	.799	.186
°Episode	2		7.979**		8.534***		.353		.379
LS	1	3.041	2.300	.580	.358	1.111	1.765	1.488	1.546

* p. < .05
** p. < .01
*** p. < .001

°Episode analyzed by multivariate test of significance using Wilks Lambda criterion; no ms value

Appendix E

Figures Cited
in Results Chapter

Figure 1

Contact Resisting Behaviors to Stranger

(N = 31 working/74 non-working mothers)

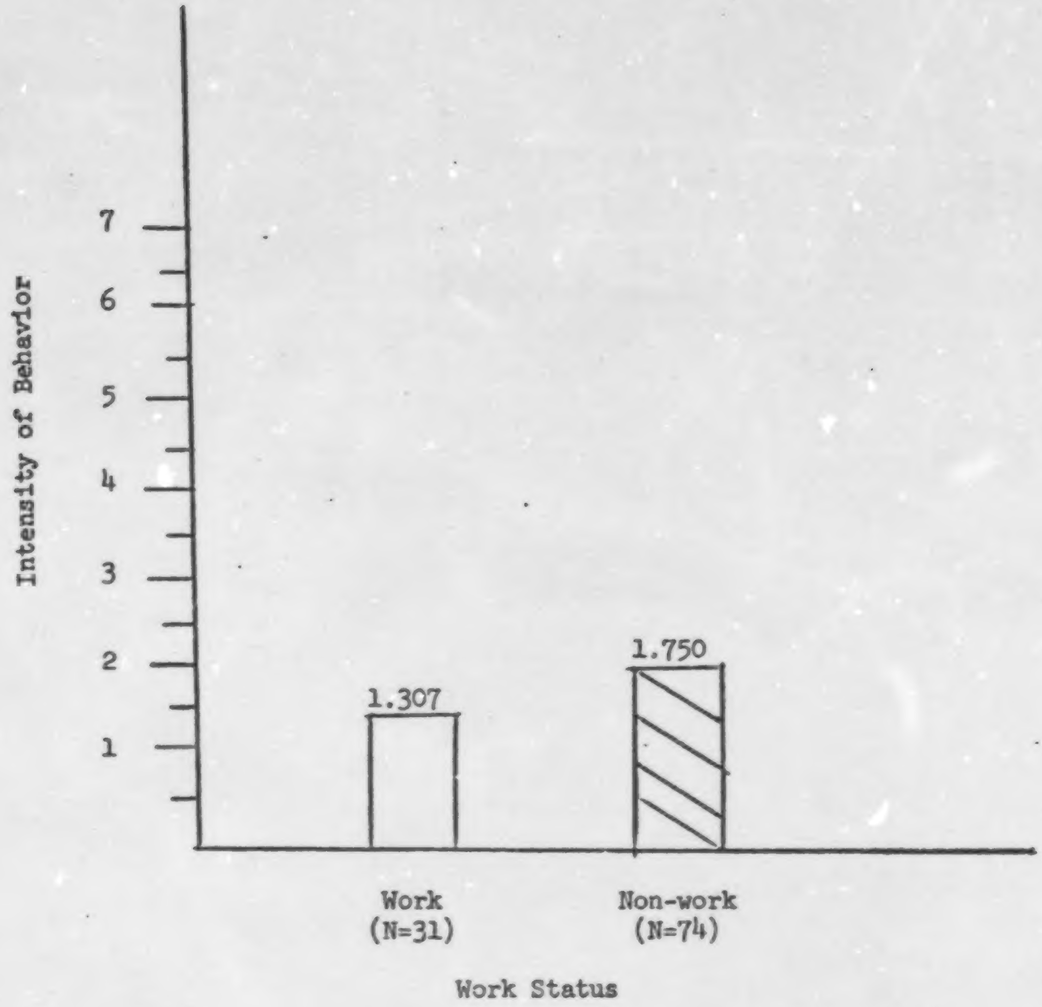

Figure 2

Contact Resisting Behaviors To Mother (N=28 working mothers)

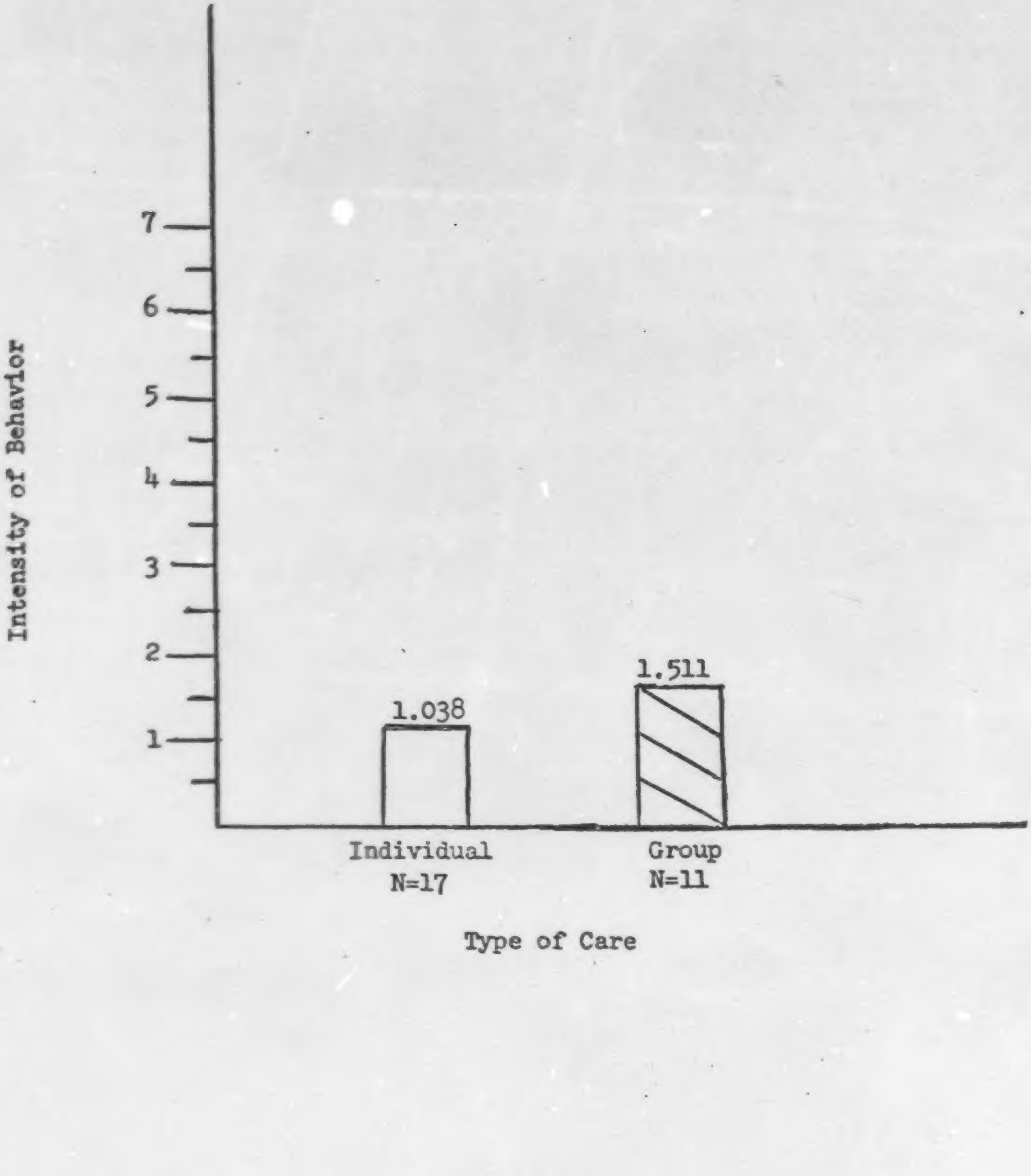

Figure 3

Proximity Seeking Behaviors to Mother
(N=83 Working Mothers)

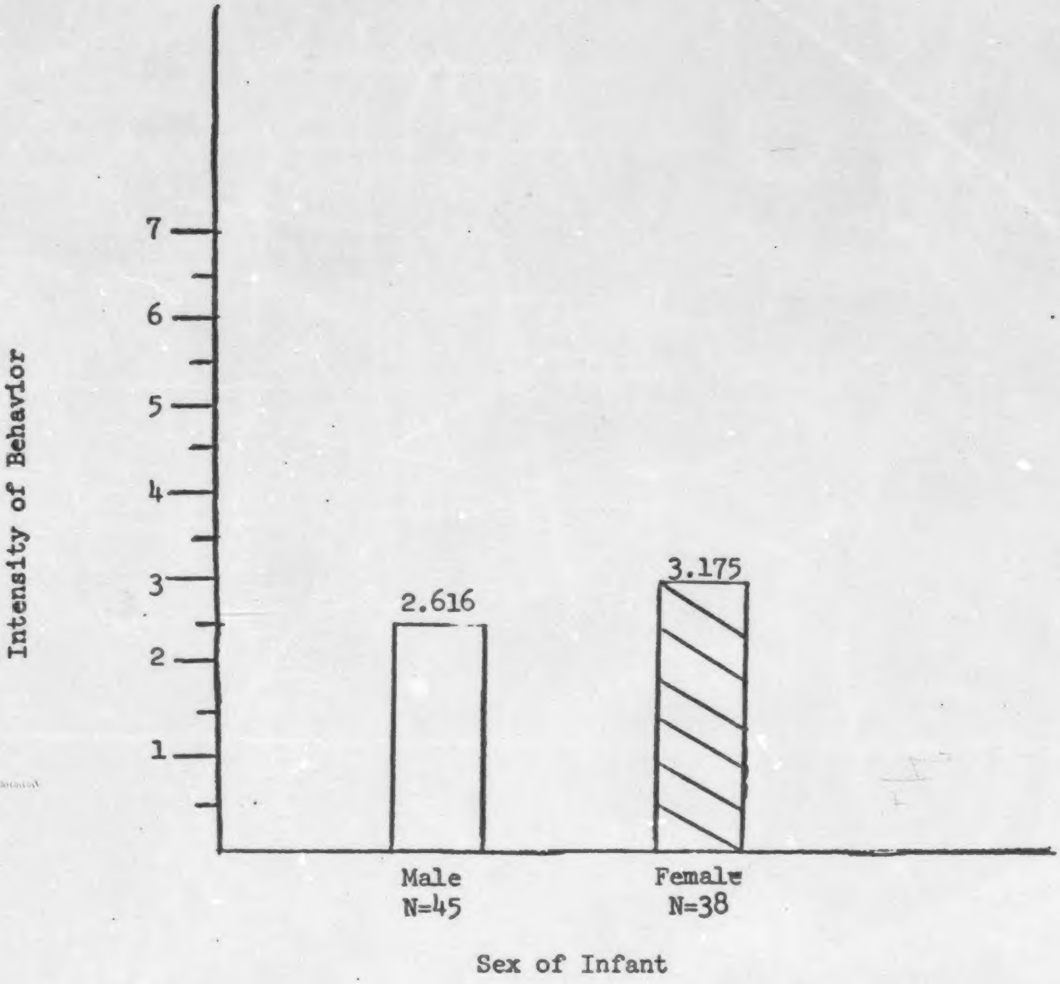

Figure 4

Contact Maintaining Behaviors to Mother
(N=28 Working Mothers)

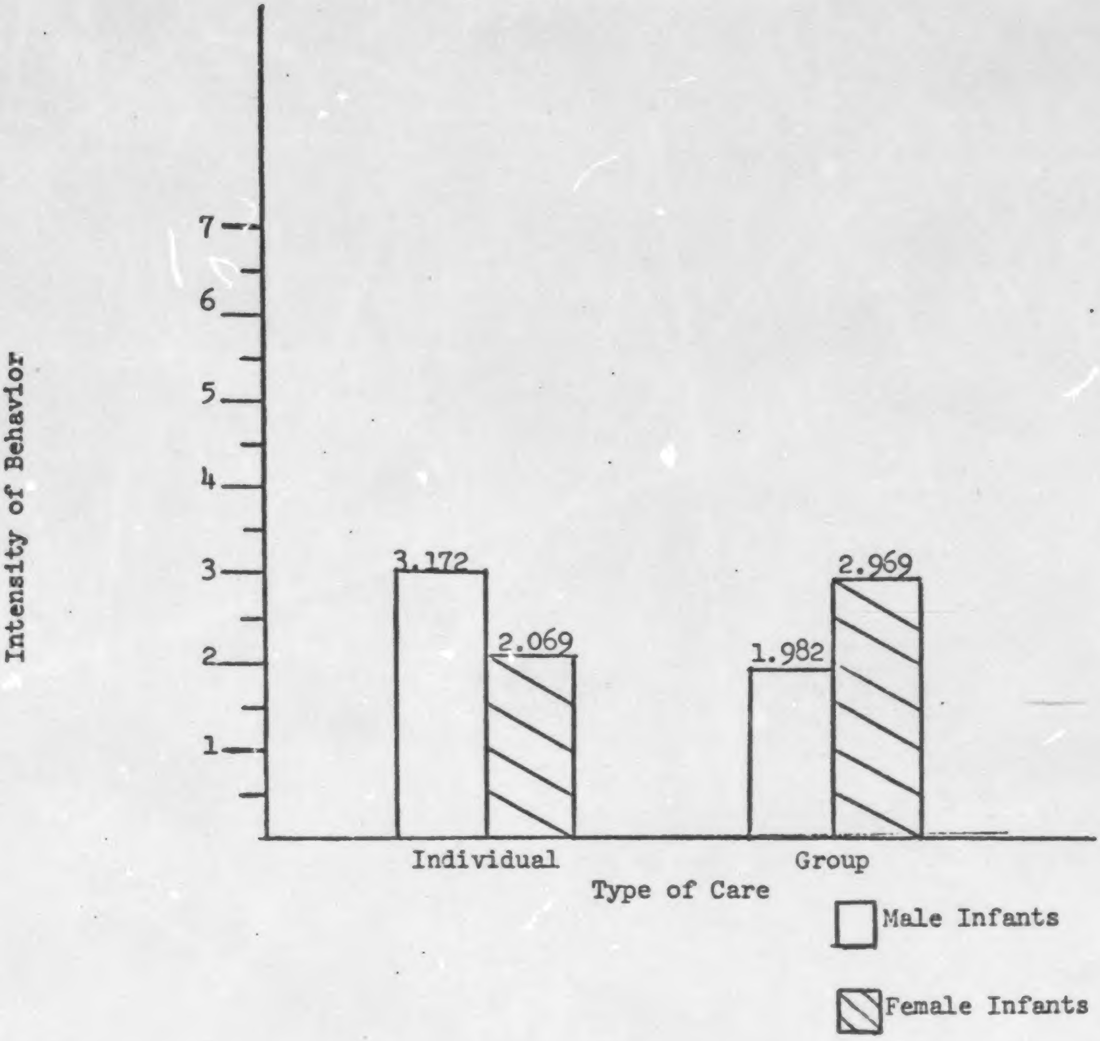

Figure 5

Proximity Seeking Behaviors to Mother
(N=28 Working Mothers)

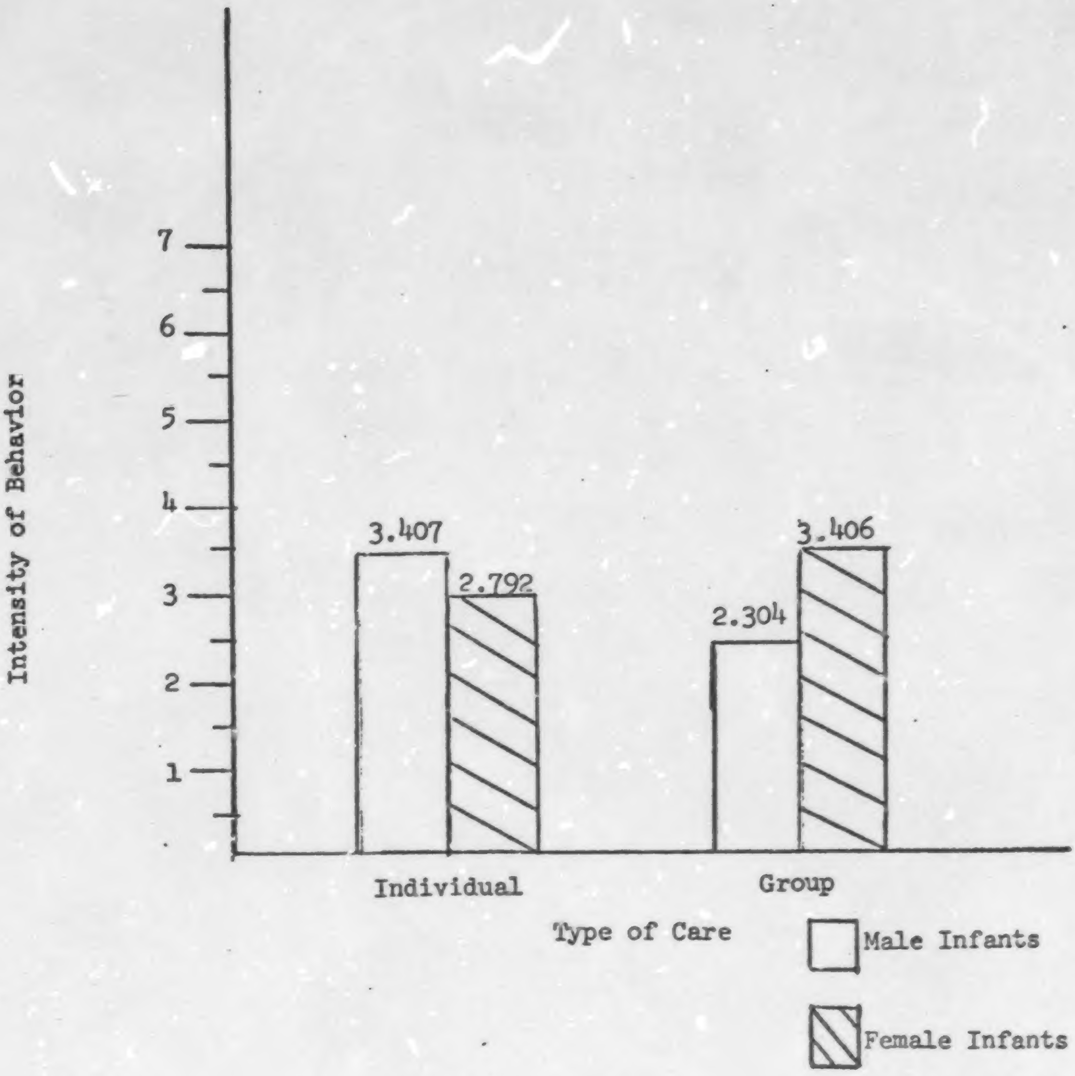

Figure 6
Cry Behavior (N=28 working mothers)

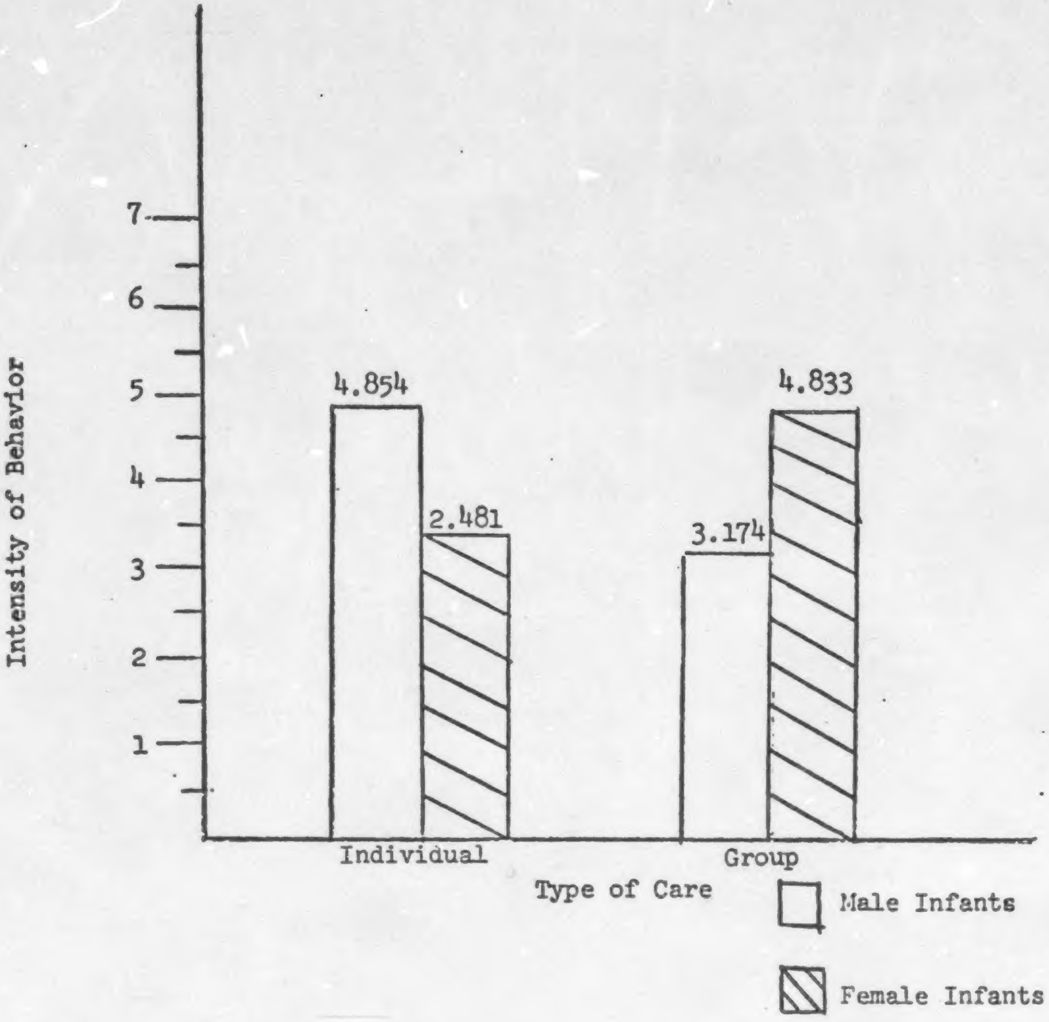

Figure 7

Proximity Avoiding Behaviors to Stranger
(N=28 Working Mothers)

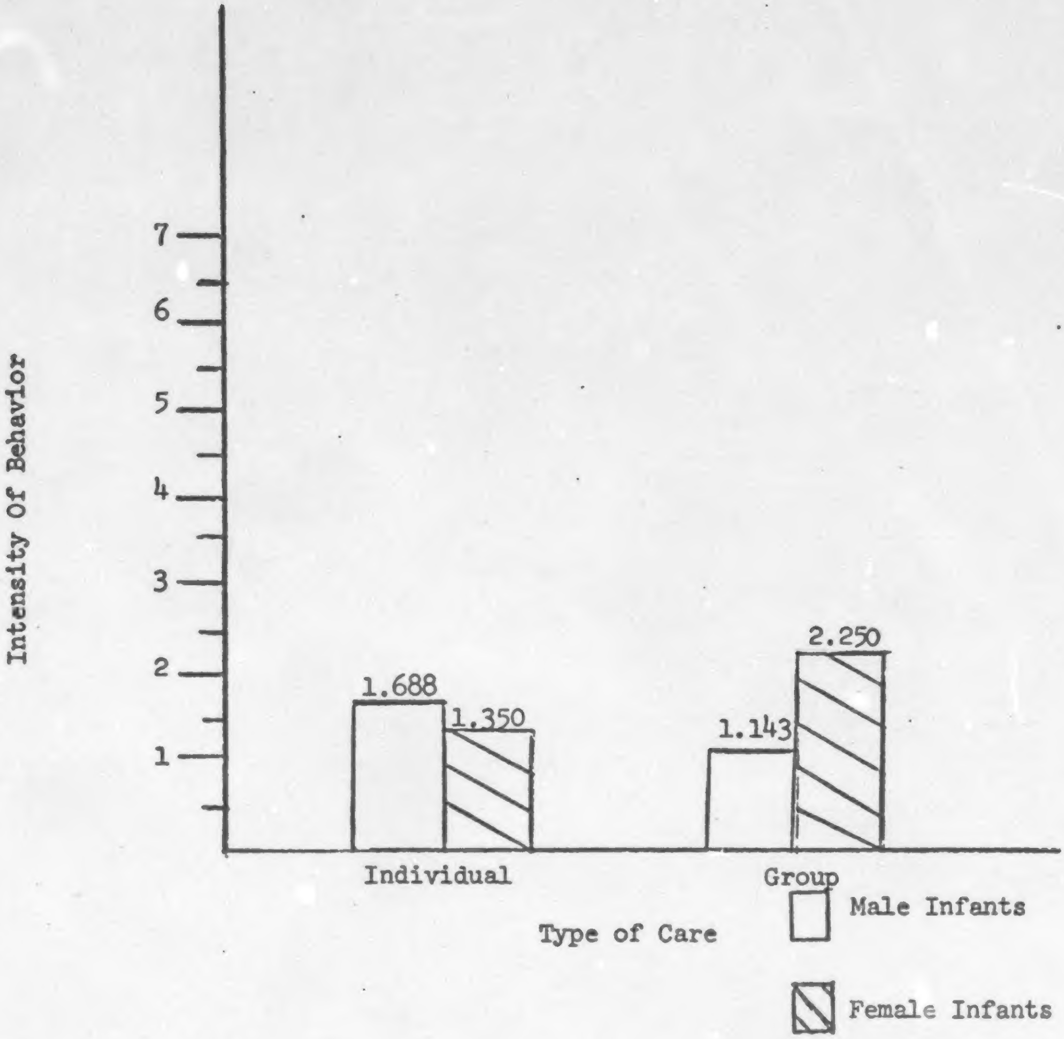

Figure 8

Proximity Seeking Behaviors to Mother (N = 83 working/74 non-working Mothers)

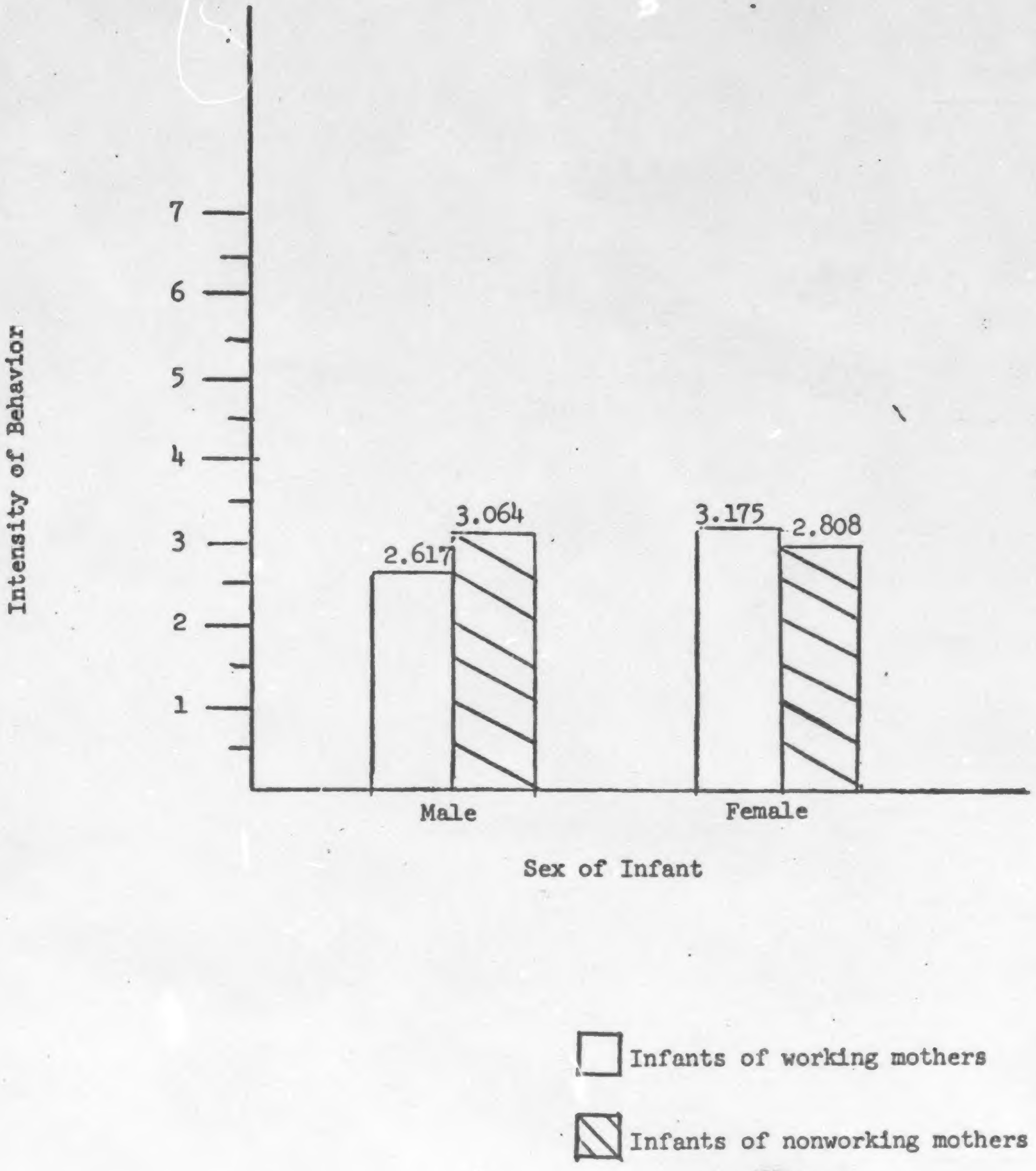

Figure 9

Contact Resisting Behaviors to Mother (N=83 working/74 non-working mothers)

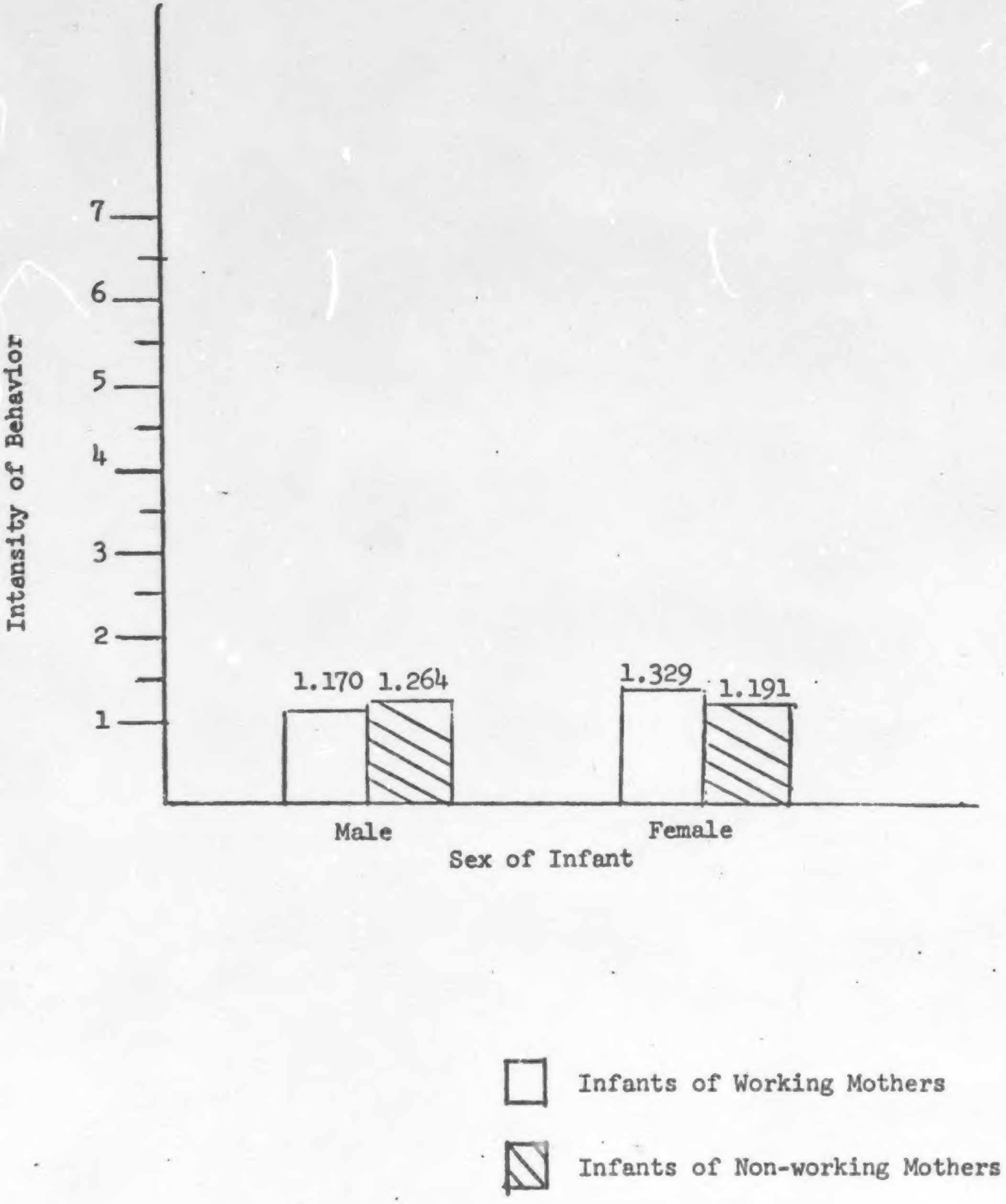

Figure 10

Proximity Seeking Behavior to Stranger
(N = 83 Working Mothers)

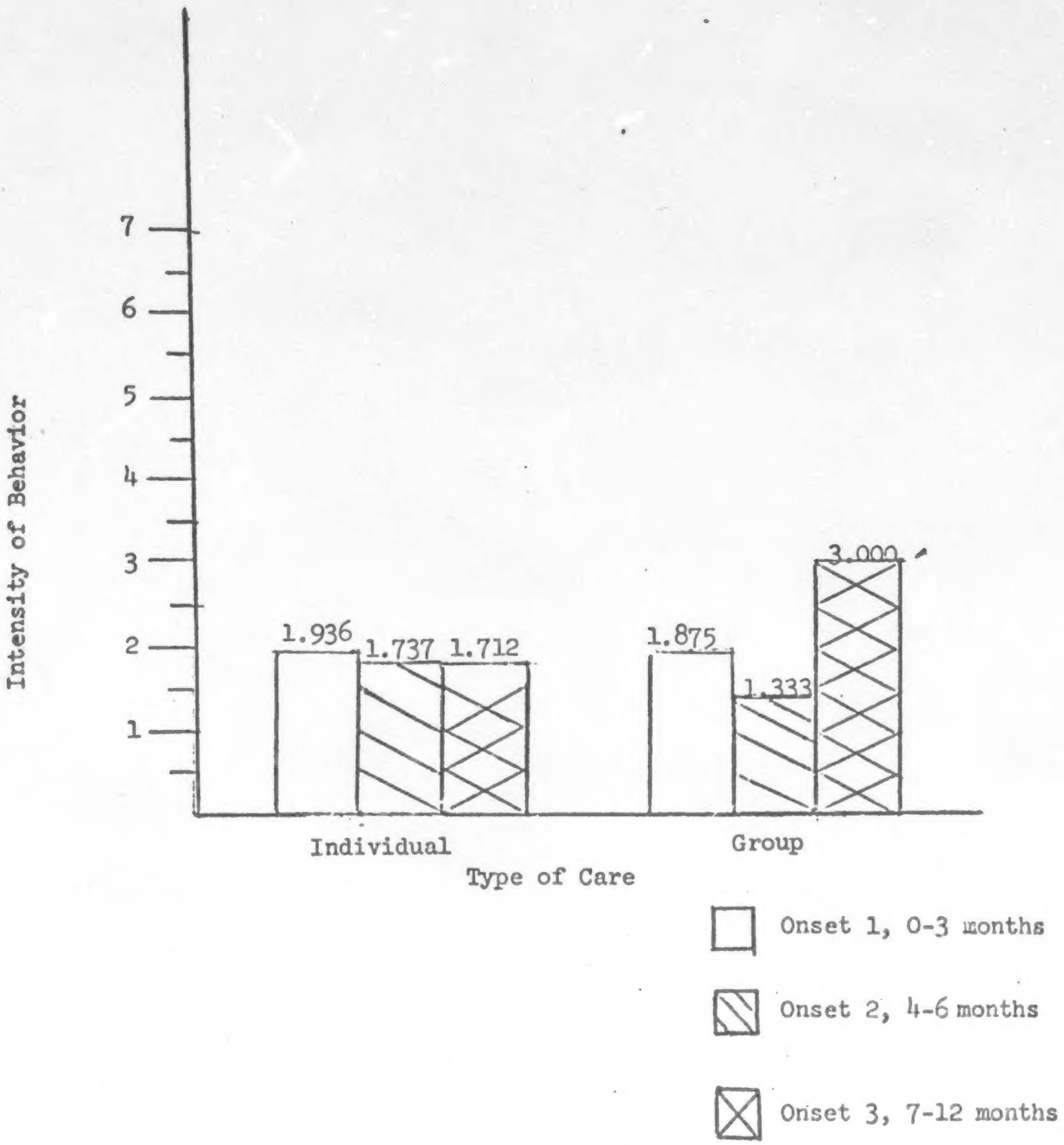

Figure 11

Contact Resisting Behaviors to Stranger (N=83 Working Mothers)

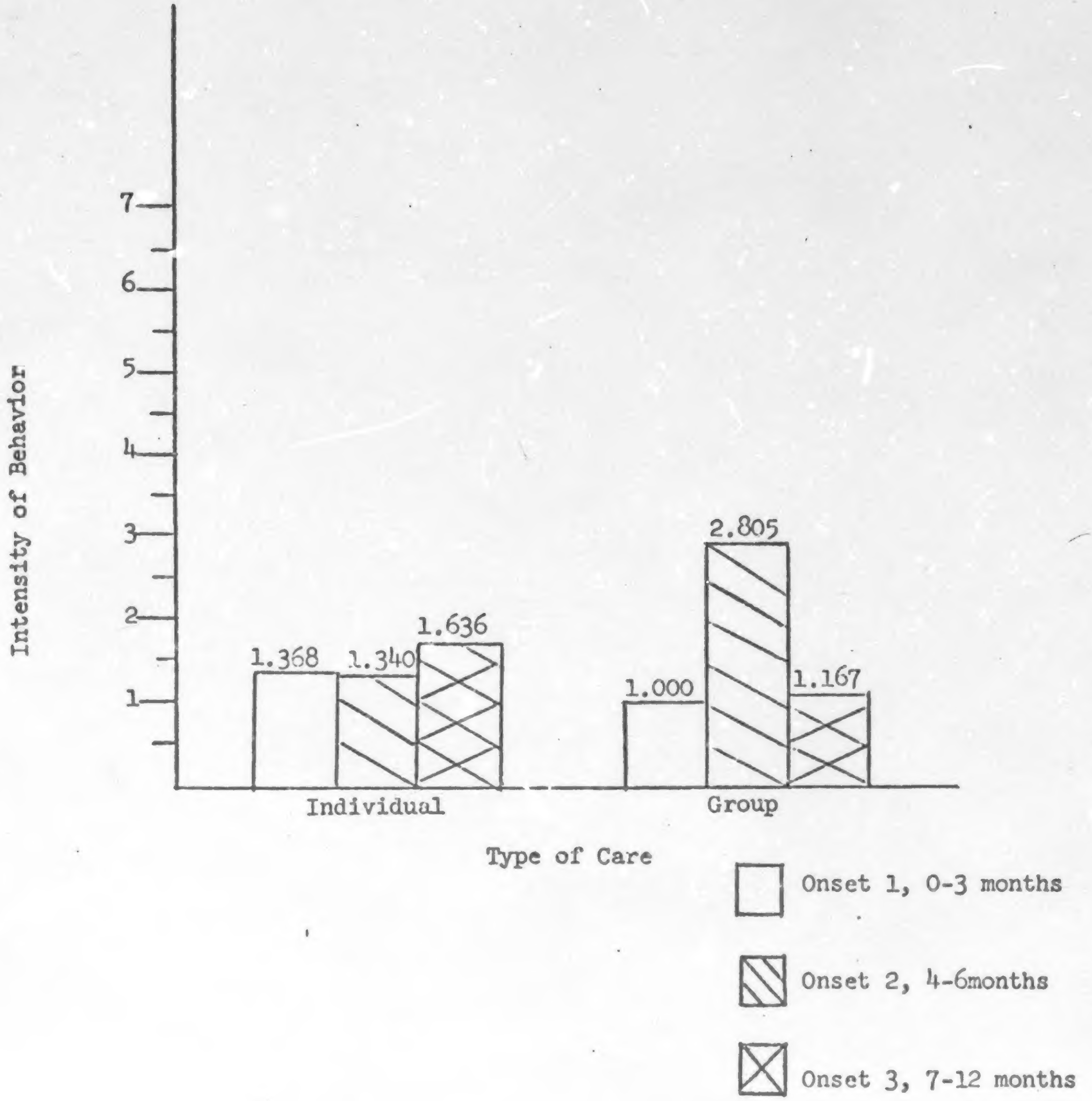

Figure 12

Proximity Seeking Behaviors to Stranger
(N=28 Working Mothers)

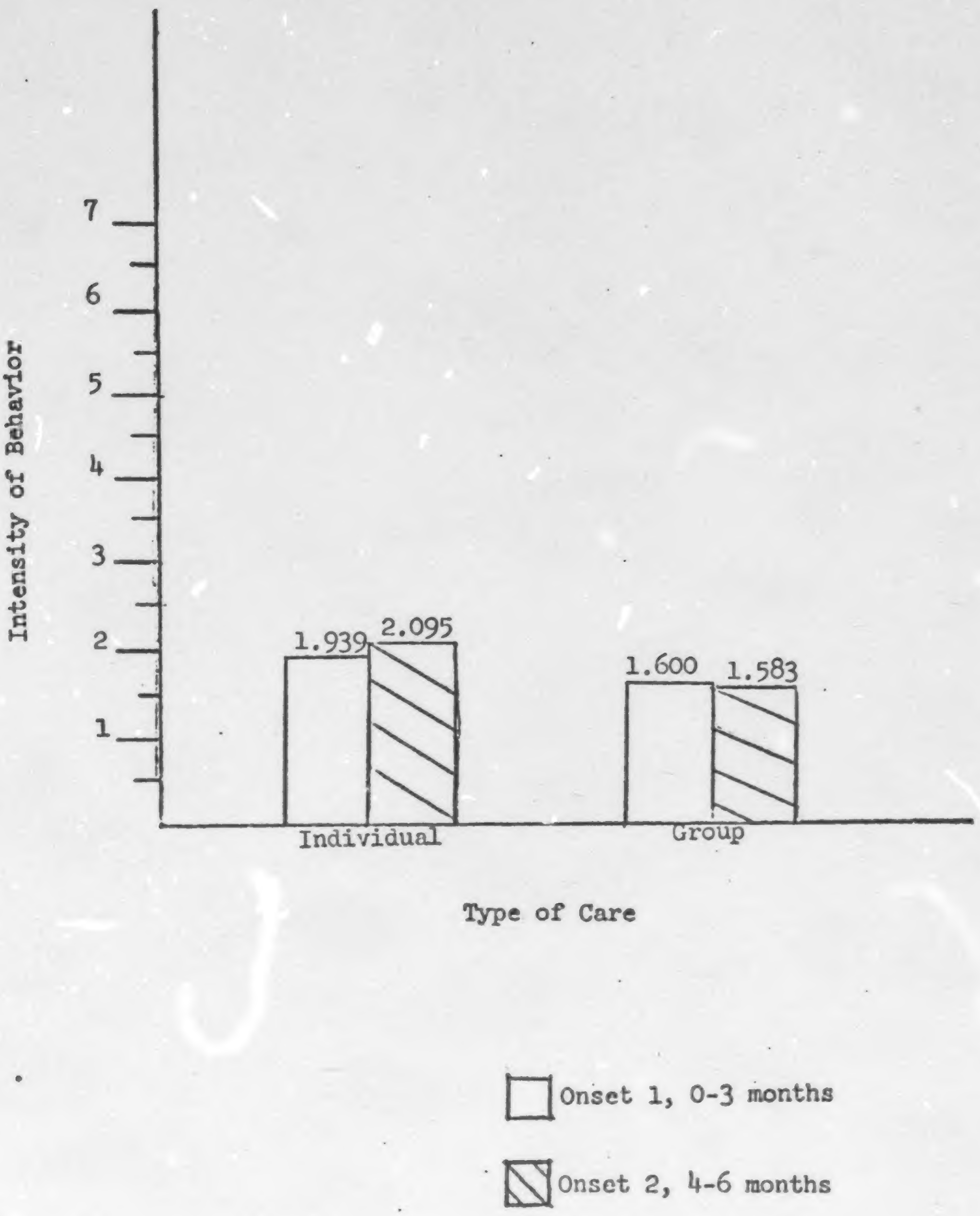

Figure 13

Contact Resisting Behaviors to Stranger
(N=28 Working Mothers)

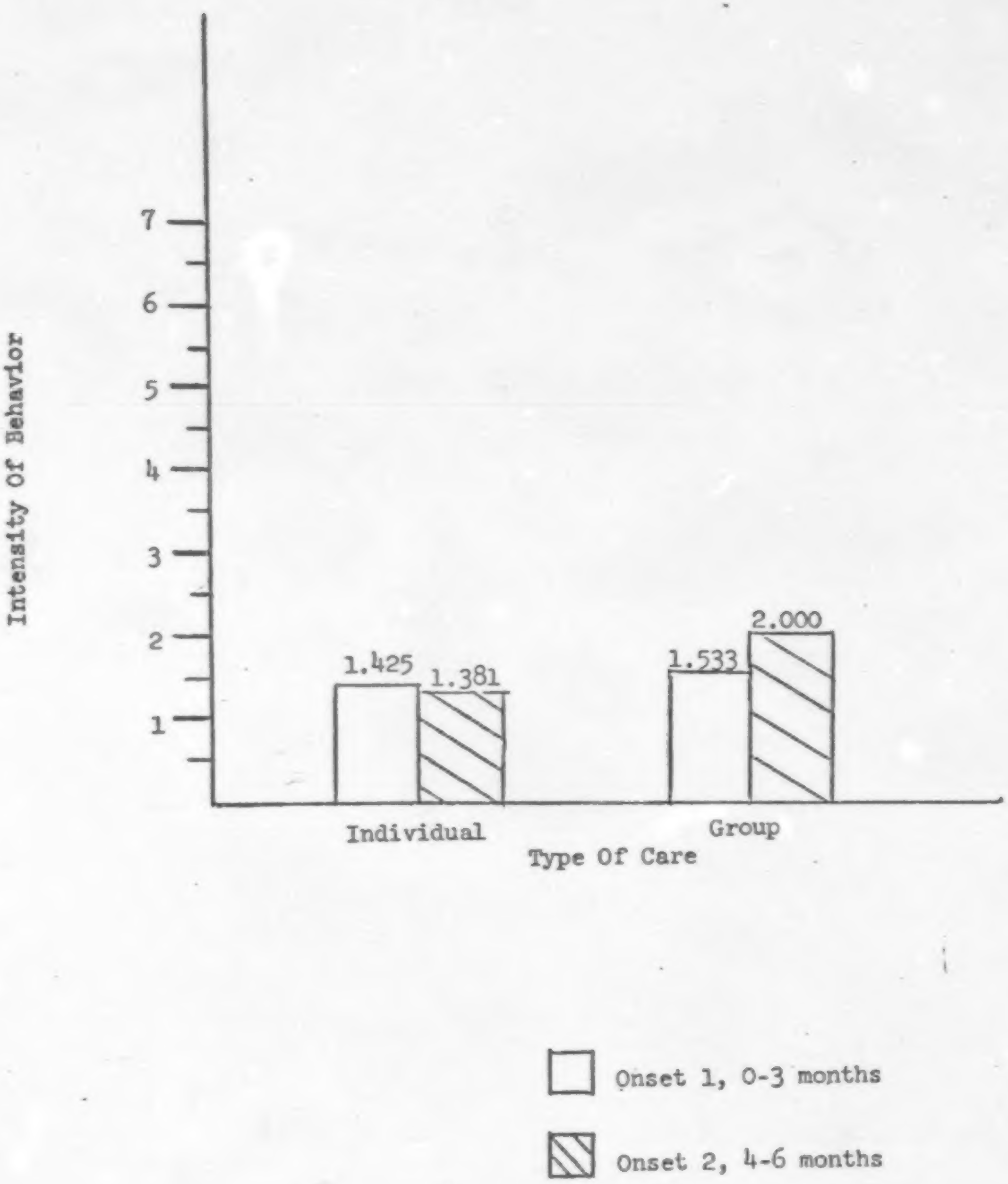

Figure 14

Search Behavior (N = 28 Working Mothers)

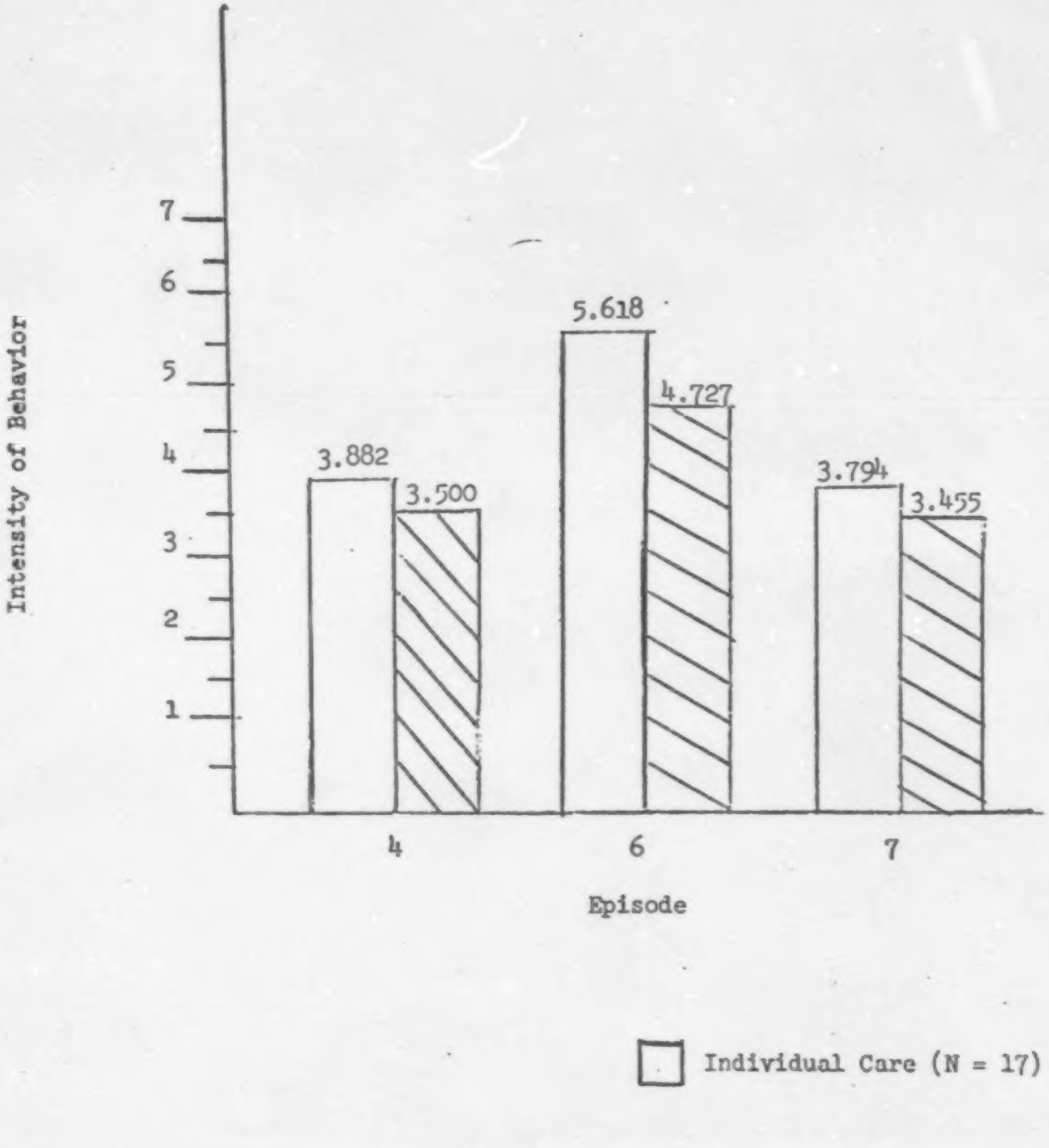

Figure 15

Cry Behavior (N = 28 Working Mothers)